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U.S. Department of the Interior
Bureau of Land Management

Preliminary Environmental Assessment

DOI-BLM-NV-L030-2015-0003-EA
July, 2015

[Murphy's Gap APD Well No. 14–23]

Applicant: Makoil, Inc.

NVN 087038, NVN 093470

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Preliminary Environmental Assessment

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July, 2015

Prepared by
U.S. Department of the Interior
Bureau of Land Management
Location
Ely District Office

[Murphy's Gap APD Well No. 14–23]
Type of Project: Oil and Gas Application for Permit to Drill

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Chapter 1. Introduction

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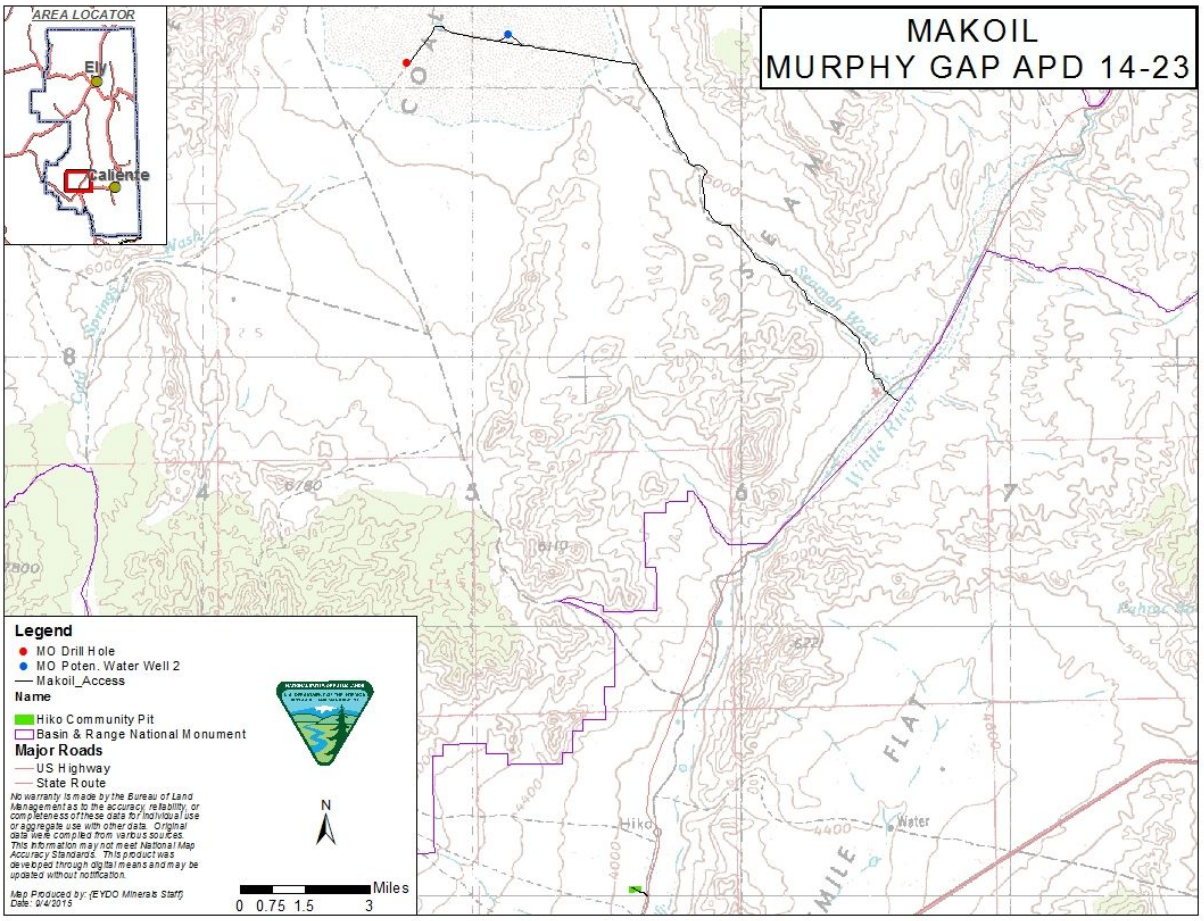
This Environmental Assessment (EA) has been prepared to analyze Makoil, Inc. proposal to drill a wildcat exploration oil well on their lease (NVN 087038) located within the Basin and Range National Monument in Coal Valley, Lincoln County, Nevada. The EA is a site-specific analysis of potential impacts that could result with the implementation of a proposed action or alternatives to the proposed action. The EA assists the Bureau of Land Management (BLM) in project planning and ensuring compliance with the National Environmental Policy Act (NEPA), and in making a determination as to whether any "significant" impacts could result from the analyzed actions. "Significance" is defined by NEPA and is found in Chapter 40 of the Code of Federal Regulations (CFR) §§1508.27. "Significance" is determined by the consideration of context and intensity of the impacts. An EA provides evidence for determining whether to prepare an Environmental Impact Statement (EIS) or a statement of "Finding of No Significant Impact" (FONSI). If there is a Finding of No Significant Impact (FONSI), the context and intensity criteria are listed with rationale for the determination in the FONSI document.

This document is tiered to, and incorporates by reference, the *Ely Proposed Resource Management Plan/Final Environmental Impact Statement* (RMP/FEIS) released in November 2007 (BLM 2007) and the *Ely Proposed Resource Management Plan/Record of Decision and Approved Resource Management Plan* (Ely RMP) released in August 2008 (BLM 2008b). Should a determination be made that implementation of the proposed or alternative actions would not result in "significant environmental impacts" or "significant environmental impacts beyond those already disclosed in the RMP/FEIS", a FONSI would be prepared to document that determination, and a Decision Record issued providing the rationale for approving the chosen alternative.

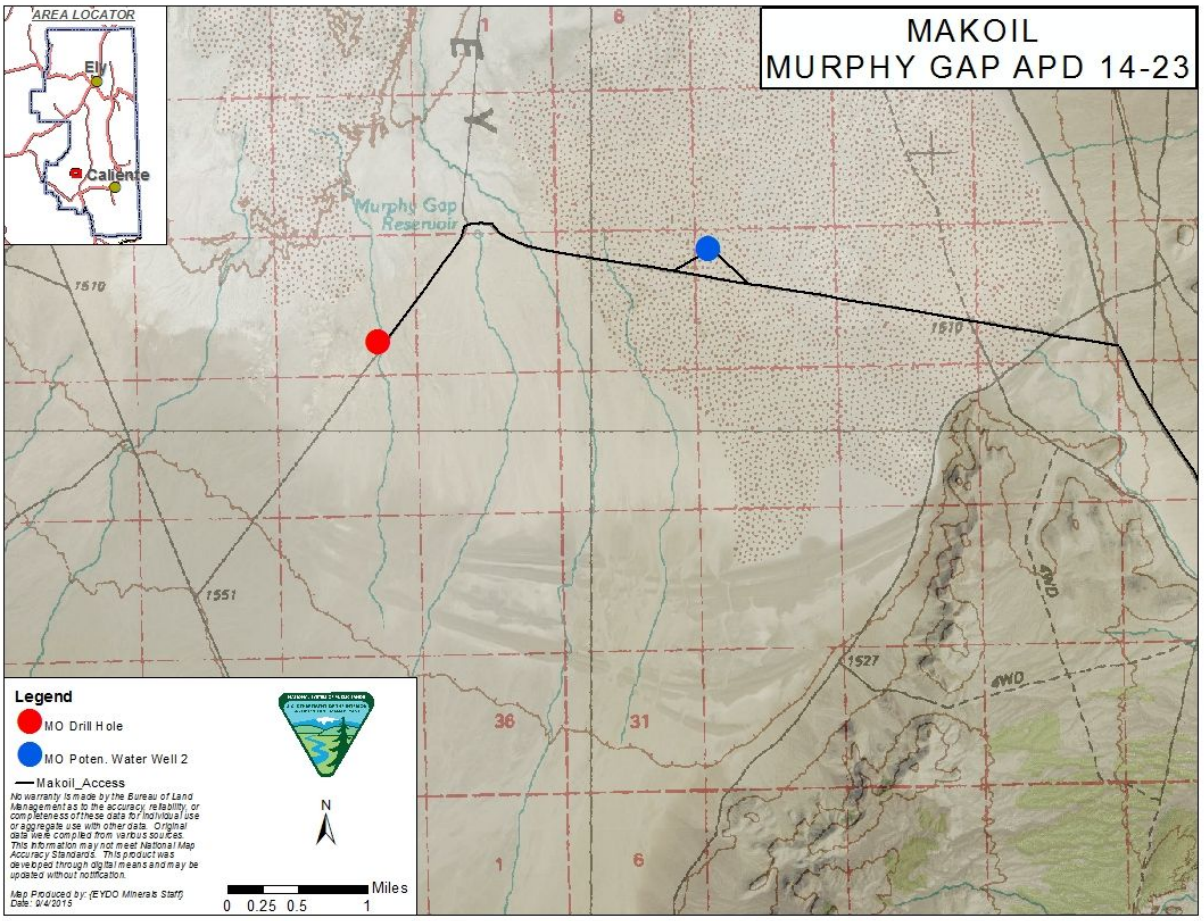
1.1. Background:

Makoil Inc. submitted a Notice of Staking (NOS) to the Caliente Field Office for the intent of drilling a wildcat oil well (Murphy Gap 14-23) in Coal Valley, approximately 17 miles northwest of Hiko, on BLM Lease No. N-87038. The proposed well is located in Section 14, Township 1 South, Range 59 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada. Access would be from Highway 318 near mile post 17 along approximately 16.4 miles of gravel county-maintained roads (Seaman Wash Road to Lower Hole Road) — see Map 1.1 and Map 1.2. Total project disturbance would be approximately 5.7 acres . An Application for Permit to Drill (APD) was submitted to BLM in July 2014.



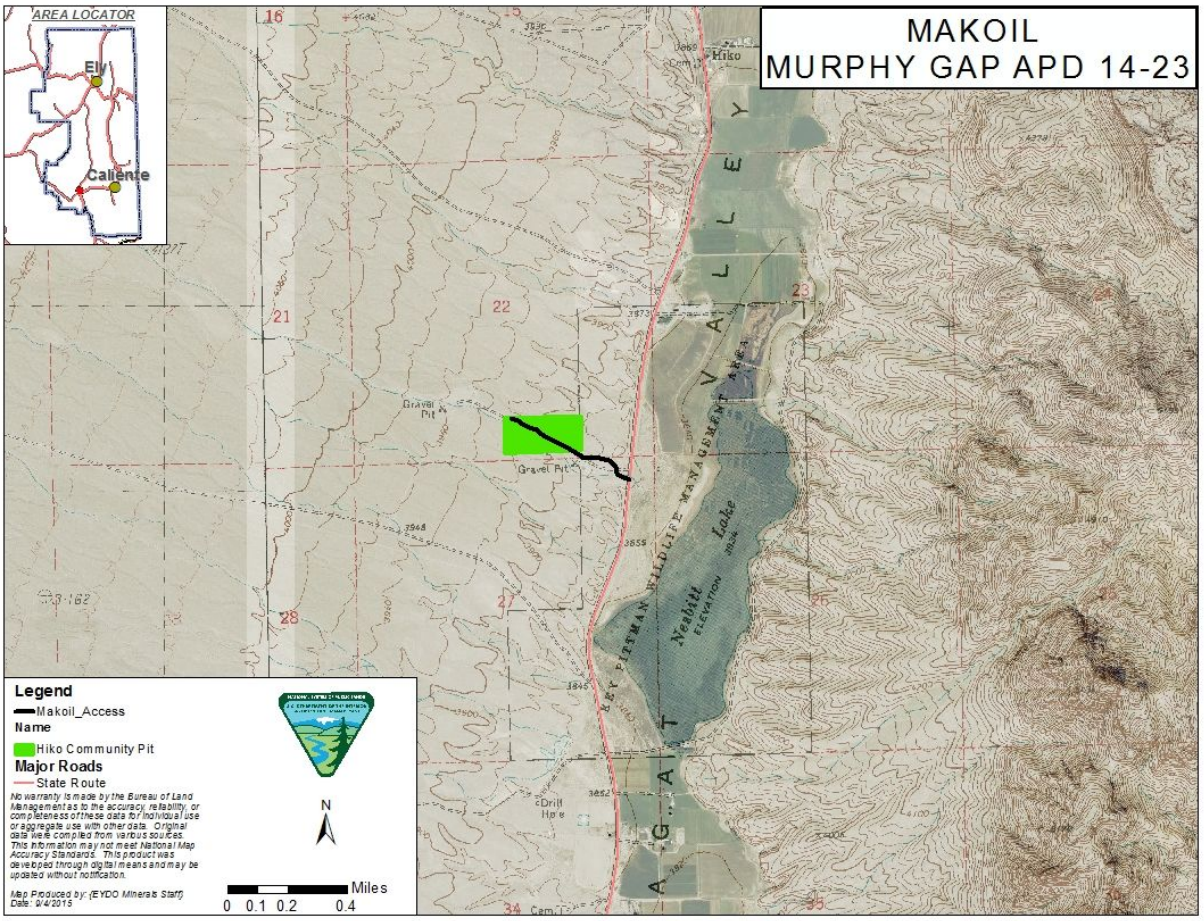
Map showing the project area within Coal Valley and access routes.

Map 1.1. General Project Location Map



This map shows the various project areas in Coal Valley and near Hiko, Nevada.

Map 1.2. Project Map — North



This map shows the community pit and access road in relation to Hiko and Key Pitman Wildlife Refuge.

Map 1.3. Project Map — South

1.2. Purpose of the Proposed Action:

The BLM's purpose in considering approval of the application for permit to develop a gravel source, maintain existing roads, install turnouts, and drill an oil well is to provide legitimate use of the public lands to the proponent. Legitimate uses are those that are authorized under the Federal Lands Management Policy (FLPMA) of 1976 or other public land acts that meet the proponent's objective while preventing undue and unnecessary degradation.

The proponent's objective is to drill an exploratory well to test for oil, and if successful, develop an oil well. If oil or gas is discovered, the well may be put into production. This EA will evaluate both exploratory drilling and potential production of the well. A new discovery may lead to additional drilling and well field development on existing leases which would require additional NEPA analysis. Furthermore, the proponent's objective to obtain a contract for gravel from the Hiko Community pit would provide a local source of materials to facilitate the cost and ease in preparing the well site. The justification for the project is provided as a right to develop an oil and gas lease under the Mineral Leasing Act of 1920, as amended, Onshore Order No. 1, and the right to obtain mineral materials under the Materials Act of 1947, as amended.

1.3. Decision to be Made:

After reviewing this analysis, BLM would decide whether to approve the Makoil's application to drill a wildcat exploration oil well on their lease (N 087038), maintain existing roads, and obtain a contract for mineral materials associated with the pad construction and road maintenance. BLM may choose to approve a subset of the requested activities. Need for the Proposed Action, This action would facilitate energy development and help to meet the intent of Executive Order 133212 dated May 18, 2001, and the Energy Policy Act of 2005 by providing a means for additional domestic production of oil and/or gas resources on Public Lands. The BLM needs to consider approval of the application for drilling an oil well to respond to its mandate under FLPMA to manage the public lands for multiple use in a manner which recognizes the Nation's need for more domestic oil to help supply the Nation's energy demands and reduce the Nation's dependency on foreign oil, while providing protection for other resources and land uses.

1.4. Preliminary Issues:

Internal scoping was conducted by an interdisciplinary team that analyzed the potential consequences of the proposed action. The interdisciplinary team attended the NOS onsite inspection on July 9, 2014 and the APD onsite inspection on August 11, 2014. The Ely District Tribal Coordinator and Caliente Field Office Archaeologist led a field trip for the Duckwater Shoshone Tribe of the Duckwater Reservation on August 14, 2014. Internal scoping was also conducted during a meeting in the Caliente Office on August 12, 2014.

Preliminary Issues identified during onsite visits and initial meetings are listed below.

1. Hydrology
2. Wildlife (Birds and pronghorn)
3. Visual Resources

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Chapter 2. Description of Alternatives, Including Proposed Action

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2.1. Introduction:

The previous chapter presented the purpose and need for the proposed project, as well as the relevant issues, i.e., those elements that could be affected by the implementation of the proposed project. In order to meet the purpose and need of the proposed project in a way that resolves the issues, the Bureau of Land Management (BLM) has developed a range of action alternatives. These alternatives, as well as a no action alternative, are presented below. The potential environmental impacts or consequences resulting from the implementation of each alternative are then analyzed in Chapter 3 for each of the identified issues.

2.2. Alternative A – Proposed Action:

This section describes the proponent's proposal as submitted in the Application for Permit to Drill (APD) and amendments.

2.2.1. Introduction and Well Location

Makoil Inc. proposes to drill a wildcat well in the southeast quarter of the southeast quarter of Section 14, Township 1 South, Range 59 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada on Lease No. 87038. Map 1.1 shows the well location and associated drilling access routes. The Notice of Staking (NOS) was distributed to agencies, tribes, and posted in the Caliente Field Office Public Room in July 2014. BLM received the APD on July 31, 2014 which was later determined complete in November 2014. The APD was made available in the public room on July 31, 2014 and remains available to the public.

Drilling operations would commence in 2015, depending on weather and rig availability, and are expected to be completed within approximately 21 days. If the hole is dry, it would be immediately plugged and abandoned. Should the well be placed into production, operations may last for several years. Production operations are generally handled through Sundry Notices and associated permitting, unless they involve additional disturbance for which additional analysis is required under the National Environmental Policy Act (NEPA). Typical activities include well development, pumping and storage facility installation, oil hauling (up to several tanker truckloads a day to a process facility), well servicing, and routine maintenance.

The Proposed Action contains specifications designed to prevent harmful impacts to environmental resources. These specifications include:

- Resource Program Best management Practices (BMPs) contained in Appendix A, Section 1 of the Ely District Record of Decision and Approved Resource Management Plan (BLM 2008b);
- The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM (Appendix A);
- The BMPs as discussed in the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development ("The Gold Book") (BLM and USDA 2007);
- A Sundry Notice and Report on Wells (form 3160-5) would be filed for approval for all changes of plans and other operations in accordance with 43 Code of Federal Regulations (CFR) 3162; and

- Makoil, Inc. would be bonded as required under 43 CFR 3104.

2.2.2. Access Roads

This section describes access to the project areas.

2.2.2.1. Existing Roads

The well site can be reached from Hiko, Nevada by traveling North on 318 approximately 14 miles to mile post 17 and then turning west onto Seaman Wash Road. Continue traveling approximately 10.6 miles northwest and then turn west onto Lower Hole Road (unmarked). Travel approximately 5.7 miles and the well site would be located on the north side of the road. A loop two-track access to an existing water well is located between the Murphy Gap Reservoir (along Lower Hole Road east of the well site) and the intersection of Lower Hole Road and Seaman Wash Road. This two-track would be utilized as a haul road for water needed at the well site and dust control on the roads, well pad, and gravel pit.

The gravel source, the Hiko Community Pit, is located approximately 1.5 miles south of Hiko. To access the Hiko Community Pit, travel south on Highway 318 about 1.5 miles. Turn west onto a dirt/gravel county road towards the transfer station. The community pit is approximately a quarter mile from the highway.

Existing roads would be maintained in same or better condition as existed prior to the commencement of operations, and maintenance would continue until final abandonment and reclamation of the well. A minimum of gravel would be used to surface existing roads to support mobilizing and demobilizing equipment.

Lower Hole Road currently measures 15-16 feet wide. Makoil does not plan to widen this road and would lay gravel down to 16 feet wide as needed. A buffer of 30 feet (15 feet from center line) is requested to avoid any inadvertent unauthorized disturbance outside of the roadway.

Maintenance includes the preserving and keeping of each roadway as nearly as possible in its existing condition as constructed, or mutually agreed upon, to provide satisfactory and safe service to all vehicles using such roadways. The dimensions would not change from their current form. A minimum of gravel would be used on the roadways to support mobile equipment, in the dry powdered-out areas of the road. The gravel would come from the proposed gravel source (see section 2.2.10). Flattening, grading would occur in order to remove potholes and smooth the surface. Watering of the roads would occur as needed to keep dust to a minimum. The water source is identified in Section 2.2.6. Maintenance of existing roads outside of the existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

Seaman Wash Road and Lower Hole Road are included in the Lincoln County Road Department-BLM Road Maintenance Agreement (RMA) (BLM and Lincoln County 2012). Lincoln County Road Department (LCRD) has an existing right-of-way on Seaman Wash Road and is responsible for maintenance. A right-of-way(s) may be issued on Lower Hole Road for maintenance, as well as maintenance of the water well access road, or these roads will continue to be maintained by the county under the Road Maintenance Agreement (BLM 2012). Maintenance of the roads and any improvements would be closely coordinated with LCRD to ensure maintenance is appropriate, timely, and to BLM standards.

2.2.2.2. Reconstructed Roads

Less than 100 feet of new access road is proposed to be constructed north of Lower Hole Road. The width would be 16 feet and flat-bladed for drilling and completion operations. Surface disturbance on/along the travel way would be kept to an absolute minimum. In the event that commercial production is established, the access road would be constructed in accordance with road guidelines established for the oil and gas exploration and activities.

No cattle guards, culverts, or fencing are needed on the roads for drilling purposes. No major cuts or fills are anticipated along the proposed access road. Road maintenance during the drilling and production phase of operations would include surface and shoulders to be kept in a safe and usable condition. The proposed new access road has been staked down the center line. This new road occurs on lease, so no right-of-way would be required. It would be considered part of the well pad disturbance.

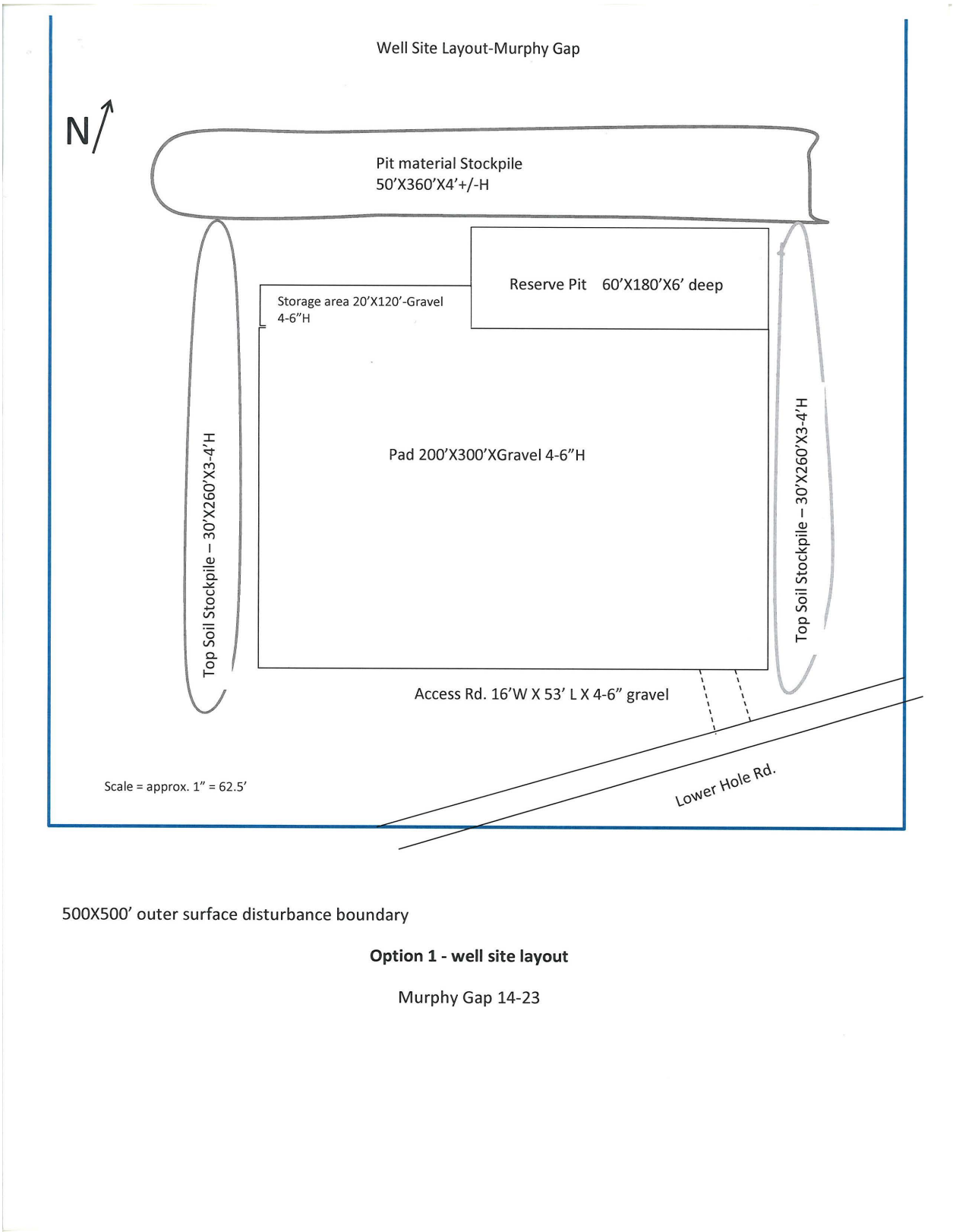
2.2.3. Well Site Layout

Surface disturbance is not expected to exceed 500 feet by 500 feet, though only 310 feet by 360 feet are anticipated to be disturbed at this time. The additional acreage builds a buffer zone that may be utilized for safety or other issues and approved with a sundry notice. There would be no cuts and fills on the pad or access road. The pad would be scraped a minimum of six inches to salvage topsoil and/or growth medium. This material would be stored along the edges of the pad as indicated in the well site layout (see Figure 2.3). All topsoil would be used in reclamation. The topsoil would be wetted if necessary to prevent fly-away. The well pad would measure 225 feet by 300 feet with additional acreage around the perimeter for a reserve pit to contain drilling fluids, topsoil stockpiles and a storage area. The material dug out to create the reserve pit would be stored along the side of the pit where the dirt contractor deems appropriate. This material would be used to refill the reserve pit after drilling operations. The proposed reserve pit would be fenced on three sides (in accordance with the Gold Book (BLM and USDA 2007), page 17) while drilling and the fourth side would be fenced while the pit dries. The reserve pit would not be lined. If birds are seen drinking from the pit during drilling operations, mitigation would be utilized to protect the animals.

Construction of the well pad and road would occur during daylight hours. The drilling operations are twenty-four hours a day, seven days a week. Lights on the drilling equipment are angled downward, towards the ground, to provide light on the well pad and create safe-lighted working areas. The majority of the lighting is filtered in order to diffuse the light.

A migratory bird survey would be conducted by an approved biologist at a maximum of two weeks prior to construction of the access road and well pad during the breeding season (March 1st through July 31st). The survey would include a 300 feet buffer around the project area. The report would be sent to the Authorized Officer in the Caliente Field Office. Makoil Inc. acknowledges the Ely RMP stipulating timing limitations for surface activity for big game animals, specifically, pronghorn antelope.

The anticipated type of rig for drilling is proposed as Rig 70 which has anticipated emissions of 10.23 tons per month based on average use of capacity (80% of 12.79 tons per month) for the engines.



Well site layout for Alternative A provided by the proponent, which describes the location of the drill hole, reserve pit, roads, and topsoil storage areas.

Figure 2.1. Well Site Layout for Alternative A

Chapter 2 Description of Alternatives, Including Proposed Action
Well Site Layout

2.2.4. Ancillary Facilities

No camp or airstrip would be required.

2.2.5. Location of Existing and/or Proposed Facilities if Well is Productive

This section describes the existing facilities near the project and any facilities proposed by the project if the well is productive. No permanent facilities are needed during exploratory drilling.

2.2.5.1. Existing Facilities

Several wells have been drilled in Coal Valley including both wildcat oil wells and water wells. Municipal water wells, permitted by Lincoln County Water District and Vidler Water Company, Inc., are located in southern Coal Valley; one in sections 2 and 11 and another in section 23, Township 2 South, Range 59 East, of the Mount Diablo Baseline Meridian. Three other water wells currently used for stock water also occur in Coal Valley and are located in section 12, Township 2 South, Range 58 East; section 16, Township 1 South, Range 60 East; and Section 21, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian. Descriptions of the four oil wells located in Coal Valley are described individually hereafter.

An oil well was drilled approximately one mile from the proposed well by Gulf Oil Corp. (Nevada – Federal CM No. 1), located in the northwest quarter of the northwest quarter of Section 17, Township 1 South, Range 60 East, of the Mount Diablo Baseline Meridian, on March 7, 1966 to a total depth of 2,434 feet. Water was encountered at 660-800 feet. Oil shows were not observed.

Eagle Exploration, Inc. drilled an oil well (Baseline Canyon Unit Federal No. 2 and 2A) approximately 5.4 miles from the proposed well, located in the southeast quarter of the southeast quarter of the southwest quarter of Section 21, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian, on November 12, 1996 to a total depth of 10,736 feet. An oil show was observed, but the well was not developed.

Another oil well was drilled by Tide Petroleum Company (Baseline Canyon Federal No. 1) approximately 8.5 miles from the proposed well, located in the northwest quarter of Section 3, Township 1 North, Range 59 East, of the Mount Diablo Baseline Meridian, on July 16, 1995 to a total depth of 2,010 feet. Oil shows were not observed.

American Quasar Petroleum Co. of New Mexico also drilled an oil well (Adobe Federal No. 19-1) approximately 13.5 miles from the proposed well, located in the northeast quarter of the southwest quarter of Section 19, Township 2 North, Range 60 East, of the Mount Diablo Baseline Meridian, on October 14, 1979 to a total depth of 7,706 feet. Water was encountered at 4605-4767 feet. No show of oil was observed and the well was converted to a water well.

2.2.5.2. Proposed Facilities

If production is obtained, new facilities are proposed to be developed. The on-site production facilities would be constructed on the gravel fill of the well pad and are not expected to exceed the 500 feet by 500 feet proposed maximum disturbance area. A sundry notice would be submitted to the Authorized Officer prior to commencement of construction and installation of the production

facilities (i.e. multiple storage tanks, generated power unit, pumping unit, small building for supplies, etc). Any required upgrades would be in accordance with BLM specification. Construction materials would be obtained from a BLM approved source. If production is obtained, the product would be transported by truck from the site. It is not feasible at this time to determine how many loads or how often trucks would run. Pipelines and power lines required for production would be determined when and if they are needed. A sundry notice would be submitted prior to installation. If production facilities are needed, Makoil would construct with the local landscape characteristics in mind and would paint the equipment a color to blend in with the surrounding environment. If possible, the foot print would be minimized for production purposes.

2.2.6. Water Source

The water supply is located approximately 3.4 miles east of the well site in the northwest quarter of Section 17, Township 1 South, Range 60 East, Mount Diablo Baseline Meridian, Lincoln County, Nevada. The water well is held by grazing permittee, Varlin Higbee, with certificate number 15954. An estimated 210,000 gallons or 5000 barrels is required to construct and drill the proposed well. The water source would be permitted through Nevada Water Resources by Jamie Drayton on behalf of Makoil, Inc. Ms. Drayton would present a copy of the permit as a Condition of Approval for the APD.

2.2.7. Waste Materials

A trash dumpster would be placed onsite. After drilling is completed, the waste materials would be hauled to a BLM approved landfill for disposal. A portable chemical toilet would be installed onsite for handling of human waste. Sewage would be hauled away and disposed of according to BLM specifications. All oil, diesel, or hydraulic fluid spills would be cleaned up immediately and removed, including any contaminated soils. All spill-related materials would be hauled to an approved disposal site.

Drilling fluids would be handled in the reserve pit. The reserve pit would be fenced in accordance with BLM specifications: three sides would be fenced during drilling; the fourth side would be fenced immediately after drilling is complete. Fluids produced during a drilling test or a production test would be collected in a test tank. Any spills, oil, gas, salt water, or noxious fluids would be cleaned up and disposed of in the reserve pit or other location approved by the BLM. If the well is productive and produces waste water, a determination would be made through sundry notice about water disposal.

2.2.8. Reclamation

When drilling is completed, the fourth side of the reserve pit would be fenced, the pit would be allowed to dry, backfilled, and leveled within the time frame specified in the conditions of approval or as specified in the Gold Book (BLM and USDA 2007). If production is not achieved, backfilling, leveling and recontouring would take place; weed control and natural drainage would be considered; the well pad and access road would be scarified, and the top soil would be spread over the surface. If reseeding is needed, it would be performed as per BLM standards. All equipment not required for production, if production is obtained, would be removed from the site. Other cleanup would be done as needed.

2.2.9. Monitoring

Monitoring needed to assess reclamation success and continuing environmental stewardship would consist of periodic compliance inspections of the area during the life of the drilling operation by an authorized officer of the BLM. This monitoring would consist of checks on initial location of facilities, conformance to the APD and Conditions of Approval, and the status of any reclamation. Post-drilling compliance inspections would document, among other things, conformance with the proposed action, completion of earthworks of the reclamation plan, and monitoring for vegetative success and any new noxious weed infestations.

2.2.10. Source of Construction Materials

Gravel for well pad construction and possibly road maintenance will be obtained from the Hiko Community Pit (See Map 1.1 and 1.3). Standard Operating Stipulations for Ely District Mineral Materials Operations (Appendix F) would be applied as well as any additional stipulations specific to the pit. A contract for the gravel operations will be obtained by the dirt work contractor prior to commencing work in the community pit.

2.2.10.1. Operating Plan

In general, operations would consist of mining, screening, and stockpiling alluvial gravel which would be loaded on trucks and hauled to the areas of use. Types of equipment may include dozers, graders, screening plants, front-end loaders, and trucks. Water for dust control would be obtained from the same source as that for the oil well or a municipal supply.

Operations would begin upon approval of the APD for the Makoil oil well 14-23. Most activity would take place over approximately two months. Reclamation would take place immediately upon completion of the gravel operations for the oil well.

2.2.11. Reclamation Plan

Upon completion of the contract, the sides of the pit slopes would be contoured at 3 (horizontal):1 (vertical). No additional reclamation is needed.

2.3. Alternative B — BLM proposed modifications to Operator's Proposal

2.3.1. Introduction and Well Location

Drilling operations would commence in 2015, depending on weather and rig availability, and are expected to be completed within approximately 21 days. If the hole is dry, it would be immediately plugged and abandoned. Should the well be placed into production, operations may last for several years. Production operations are generally handled through Sundry Notices and associated permitting, unless they involve additional disturbance for which additional NEPA analysis is required. Typical activities include well development, pumping and storage facility installation, oil hauling (up to several tanker truckloads a day to a process facility), well servicing, and routine maintenance.

The Proposed action contains specifications designed to prevent harmful impacts to environmental resources. These specifications include:

- Resource Program Best management Practices (BMPs) contained in Appendix A, Section 1 of the Ely District Record of Decision and Approved Resource Management Plan (BLM 2008b);
- The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM (Appendix A);
- The BMPs as discussed in the Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development ("The Gold Book") (BLM and USDA 2007);
- A Sundry Notice and Report on Wells (form 3160-5) would be filed for approval for all changes of plans and other operations in accordance with 43 CFR 3162; and
- Makoil, Inc. would be bonded as required under 43 CFR 3104.

2.3.2. Access Roads

This section describes access to the project areas.

2.3.2.1. Existing Roads

Seaman Wash Road and Lower Hole Road would be utilized as access roads as described in Alternative A. The Road Maintenance Agreement (RMA) between BLM and Lincoln County, signed February 2012 (BLM and Lincoln County 2012).

The Seaman Wash Road is currently authorized to Lincoln County under Right-of-Way (ROW) grant N-57490. Under the RMA, this road is labeled Coal Valley Road, however, we refer to it as the Seaman Wash Road in this document. Although the lands remain under BLM jurisdiction, these two roads are maintained by the Lincoln County Road Department (LCRD) as per the ROW grant and the RMA (BLM and Lincoln County 2012). Additional maintenance of these roads would be closely coordinated through LCRD to ensure maintenance is appropriate, timely, and to BLM standards. These roads would be maintained in a safe condition for all users.

Under this Alternative, access to the water well will be limited to the road oriented NW-SE that is currently graveled. The other segment of the loop road is a dirt two-track (oriented NE-SW) and would not be permitted for use.

The gravel source, Hiko Community Pit, would be accessed as described in Alternative A.

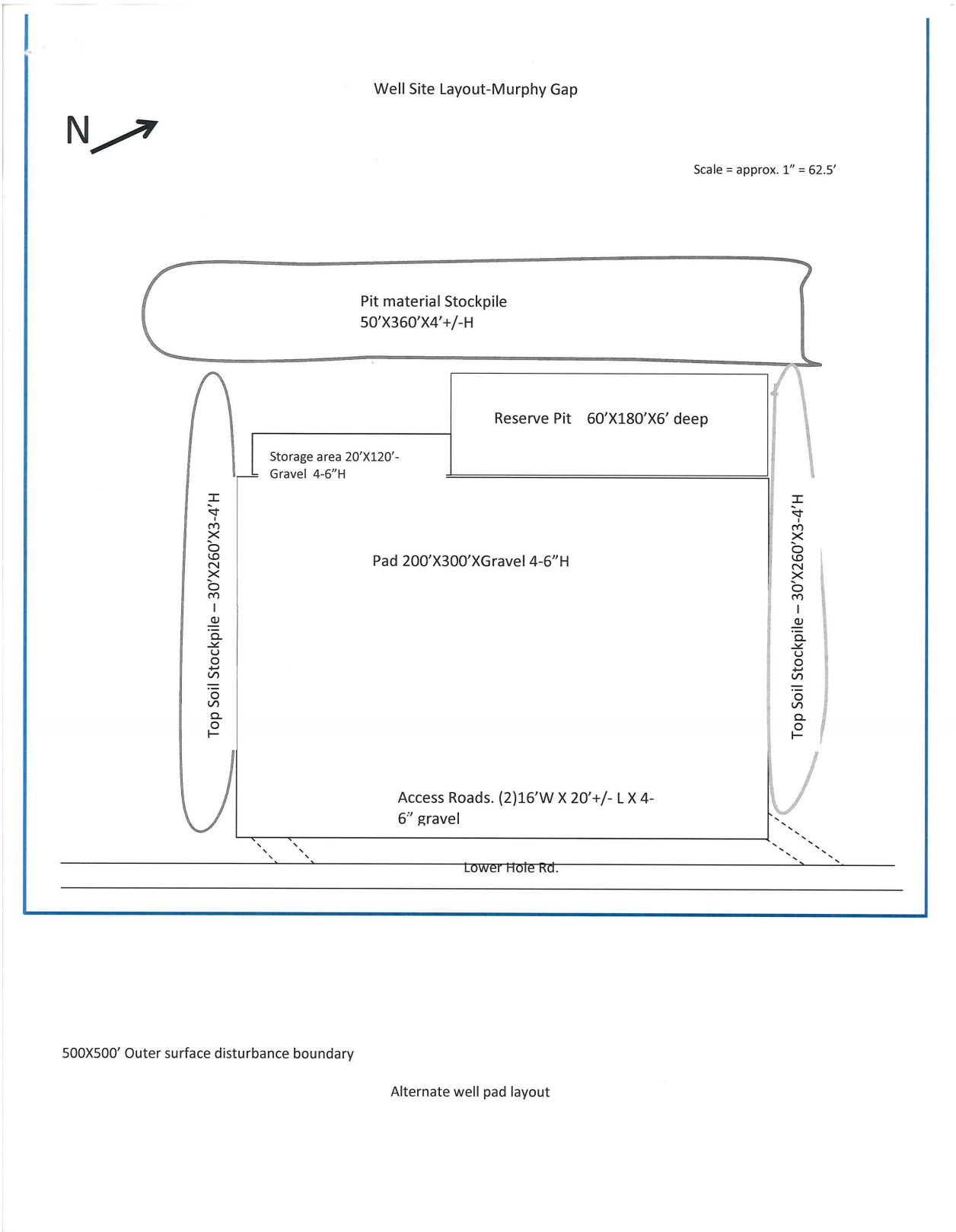
2.3.2.2. Reconstructed Roads

No new roads would be constructed under this alternative.

2.3.3. Well Site Layout

The well pad proposes a disturbance of 310 feet by 360 feet (see Figure 2.3 for layout design), though a total potential disturbance of 500 feet by 500 feet may be needed. Contrary to Alternative A, the pad would be shifted south and located immediately alongside Lower Hole Road under

this alternative. If BLM chooses this alternative, Makoil would supply a new surveyed well site layout (to update Figure 2.3) that includes a new drill hole. The location of the facilities and drill hole would change but the footprint (size and shape) should not.



Well site layout for Alternative B provided by the proponent, which describes the location reserve pit, roads, and topsoil storage areas.

Figure 2.2. Well Site Layout for Alternative B

Chapter 2 Description of Alternatives, Including Proposed Action
Well Site Layout

The pad is sited on nearly level ground so no cut and fill would be needed. The pad would be scraped a minimum of six inches to salvage topsoil and/or growth medium. This material would be stored along the edges of the pad as indicated in the well site layout (see Figure 2.3). The topsoil would be seeded (and wetted as necessary until vegetation is sustained) to prevent fly-away and keep the soil viable. Construction of the well pad and road would occur during daylight hours. The drilling operations are twenty-four hours a day, seven days a week. Lights on the drilling equipment are angled downward, towards the ground, to provide light on the well pad and create safe-lighted working areas. The lights would be filtered in order to diffuse the light.

A migratory bird survey would be conducted by an approved biologist at a maximum of seven days prior to any surface clearing activities. The survey would include a 300 feet buffer around the project area. The report would be sent to the Authorized Officer in the Caliente Field Office. The Ely RMP stipulation requiring timing limitations from November 1st to March 31st for surface activity for pronghorn antelope, would be honored. However, Makoil Inc. requests a modification to the timing limitation be granted due to the poor state of vegetation in the area and lack of antelope sitings in the general vicinity.

Several methods of handling drilling fluids are considered under this alternative including on-site disposal and burial of waste (e.g. lined reserve pit), solidification of drilling wastes (e.g. reserve pit with solidifying agent to speed up solidification process), closed loop system (e.g. sealed tanks and no pit), and treatment and reuse of drilling fluids (e.g. collect in a closed system, treat the wastes and reuse or dispose of in an approved facility).

If a reserve pit is utilized, it is proposed to be 6 feet deep by 180 feet long by 60 feet wide, and the material dug out of the pit would be stored along the side of the pit where the dirt contractor deems appropriate. This material would be used to refill the reserve pit after drilling operations. The pit would be constructed in accordance with the Gold Book (pages 16-17) and lined. The proposed reserve pit would be fenced on three sides (in accordance with the Gold Book, page 17) while drilling and the fourth side would be fenced while the pit dries. The reserve pit would be netted immediately after drilling ceases and in accordance with the standards in Washington Office Instruction Memorandum 2013-033 (see Appendix B). Fencing and netting will be maintained until the pit is dry and ready to be reclaimed. The reserve pit may be allowed to dry on its own following drilling, or additives such as cement, fly ash, or lime kiln dust may be used to solidify the pit quickly.

If a closed loop system is utilized, no pit will be needed. However, the drilling solids recovered in a steel tank will need to be transferred to a synthetically-lined clay pad for drying. The clay pad may take up more space than the reserve pit and therefore create a larger disturbance than proposed in Figure 2.3. The disturbance should not exceed the maximum 500 feet by 500 feet pad proposed. Once dry, the drilling solids would be transferred to an approved commercial disposal facility or buried on site. Since there is no cut on this pad to utilize in burying the materials, it is more likely that they would be hauled to a commercial facility.

Treatment and reuse of drilling fluids is another option that could be implemented here. This technology allows the freshwater, heavy brine, condensate, and methanol to be collected and separated on-site. The freshwater can be reused as drilling fluid in other locations or used to benefit livestock or wildlife. Methanol and brine are reused as drilling fluids, and the condensate is sold.

2.3.4. Ancillary Facilities

No camp or airstrip would be required.

2.3.5. Location of Existing and/or Proposed Facilities if Well is Productive

This section describes the existing facilities near the project and any facilities proposed by the project if the well is productive. No permanent facilities are needed during exploratory drilling.

2.3.5.1. Existing Facilities

The location of existing facilities would not vary from those identified in Alternative A.

2.3.5.2. Proposed Facilities

If production is obtained, new facilities are proposed to be developed. The on-site production facilities would be constructed on the gravel fill of the well pad and are not expected to exceed the 500 feet by 500 feet proposed maximum disturbance area. A sundry notice would be submitted to the Authorized Officer prior to commencement of construction and installation of the production facilities (i.e. multiple storage tanks, generated power unit, pumping unit, small building for supplies, etc). Any required upgrades would be in accordance with BLM specification. Construction materials, if needed, would be obtained from a BLM approved source. If production is obtained, the product would be transported by truck from the site. It is not feasible at this time to determine how many loads or how often trucks would run. Pipelines and power lines that may be required for production would require sundry notice, which would require additional NEPA and BLM approval prior to installation. If production facilities are needed, Makoil would construct facilities with the local landscape characteristics in mind. This would include painting the equipment a color (approved by the BLM) to blend in with the surrounding environment, using low profile facilities, staining soils, etc. As much is possible, the foot print would be minimized for production purposes (e.g. production facilities near the entrance of the pad). Facilities (e.g. tanks and stacks) with open tops would be screened or otherwise closed to prevent birds, bats and other wildlife from entering per the guidance in Washington Office Instruction Memorandum 2013-033 (see Appendix B).

2.3.6. Water Source

Under this Alternative, the water source would remain the same as proposed in Alternative A. A copy of the permit from the State of Nevada would be required as a Condition of Approval (COA).

2.3.7. Waste Materials

A trash dumpster would be placed onsite. After drilling is completed, the waste materials would be hauled to a BLM approved landfill for disposal. A portable chemical toilet would be installed onsite for handling of human waste. Sewage would be hauled away and disposed of according to BLM specifications. All oil, diesel, or hydraulic fluid spills would be cleaned up immediately

and removed, including any contaminated soils. All spill-related materials would be hauled to an approved disposal site.

Depending on the method of handling drilling fluids (or solids), they may be disposed of in different ways. The drilling materials would either be hauled off-site to a commercial disposal facility or handled in the reserve pit. If a reserve pit is used, the pit would be fenced in accordance with BLM specifications (The Gold Book page 17: three sides would be fenced during drilling; the fourth side would be fenced immediately after drilling is complete. Fluids produced during a drilling test or a production test would be collected in a test tank. Any spills, oil, gas, salt water, or noxious fluids would be cleaned up and disposed of in the reserve pit or other location approved by the BLM. If the well is productive and produces waste water, a determination would be made through sundry notice about water disposal.

Hazardous Chemicals will be contained in structures sufficiently impervious to prevent a discharge and should be consistent with the Environmental Protection Agency's Spill Prevention, Control, and Countermeasures (SPCC) regulation (40 CFR 112). Containment structures and strategies should be routinely monitored and maintained to ensure satisfactory containment.

All spills or leakages of oil, gas, salt water, toxic liquids or waste materials, blowouts, fires, personal injuries, and fatalities should be reported by the operator to the BLM in accordance with the requirements of Notice to Lessees NTL -3A and in accordance with any applicable federal, state, or local requirements (The Gold Book page 39).

Bioremediation

2.3.8. Reclamation

If the well is productive, then interim reclamation will be completed within six months of well completion. Final reclamation will be completed within six months of well plugging if non-productive, or within six months of ceasing production.

2.3.8.1. Interim Reclamation

The well would be plugged in accordance with the sundry notice and Reports on Wells, Form 3160-5 and other pertinent federal and state regulations. All equipment, temporary facilities, trash and debris, pit fencing, etc. will be removed from the site. The reserve pit (if utilized), when dry, would be buried in accordance with guidance on page 44 of the Gold Book (BLM and USDA 2007). Gravel would be removed from the portions of the pad not needed for production operation (this may include roads if deemed appropriate) in accordance with the guidance on pages 46-47 of the Gold Book (BLM and USDA 2007). The pad area would be ripped to a minimum of one foot, recontoured with the natural topography in mind, and covered with topsoil. The site would then be seeded. Timing of reclamation should be coordinated with the seasons to affect the best vegetative success within the reclamation time frame. The perimeter of the disturbance would be fenced to exclude cattle until the vegetation is sustained to a level approved by the BLM. Fencing would be installed consistent with the guidance provided in Washington Office Instruction Memorandum 2013–033 (see Appendix B).

2.3.8.2. Final Reclamation

The well would be plugged in accordance with the sundry notice and Reports on Wells, Form 3160-5 and other pertinent federal and state regulations. All equipment, facilities, trash and debris, etc. will be removed from the site. Gravel would be removed from the pad in accordance with the guidance on pages 46-47 of the Gold Book (BLM and USDA 2007). The pad area would be ripped to a minimum of one foot, recontoured with the natural topography in mind, and covered with topsoil. The site would then be seeded. Timing of reclamation should be coordinated with the seasons to affect the best vegetative success within the reclamation time frame. The perimeter of the disturbance would be fenced to exclude cattle until the vegetation is sustained to a level approved by the BLM. Fencing would be installed consistent with the guidance provided in Washington Office Instruction Memorandum 2013–033 (see Appendix B).

2.3.9. Monitoring

The operator would be responsible for monitoring the site post drilling to check on and/or maintain any of the following: fencing or other safety measures, the reserve pit, interim or final reclamation success, and production facilities. This task is usually conducted by physically visiting the site. The timing of when and how often these visits may occur could vary due to the nature of what is to be monitored and weather conditions. Remote telemetry monitoring stations can also be used to eliminate the need for, or reduce the regularity of physical site visits. Either of these options may be utilized by the operator for monitoring this site.

Additionally, BLM would be monitoring the site as well to assess reclamation success and continuing environmental stewardship. This monitoring would consist of checks on initial location of facilities, conformance to the APD and Conditions of Approval, and the status of any reclamation. Post-drilling compliance inspections would document, among other things, conformance with the proposed action, completion of earthworks of the reclamation plan, and monitoring for vegetative success and any new noxious weed infestations.

2.3.10. Source of Construction Materials

These details would not vary from those described in Alternative A.

2.4. Alternative C – No Action:

The no action alternative, to not develop the gravel source, construct the well pad, maintain the existing roads, install turnouts, or drill the wildcat well, is carried forward in this EA.

2.5. Alternatives Considered, but Eliminated from Further Analysis

No other alternatives are necessary to respond to unresolved conflicts concerning alternative uses of available resources.

2.6. Relationship to Planning

This section discussed the relationship of the proposed action and alternatives with existing planning documents.

2.6.1. Conformance with BLM Land Use Plan(s):

The Mineral Leasing Act of 1920, as amended, and the Mineral Leasing Act for Acquired Lands of 1947, as amended, gives the BLM responsibility for oil and gas leasing on approximately 570 million acres of BLM, National Forest, and other Federal lands, as well as private lands where the Federal Government has retained mineral rights. Leasing areas are developed through BLM's planning process. The lessee has a right to access, explore for, drill, produce, and dispose of oil and gas resources within the lease. Drilling and associated operations must be reasonable and not cause unnecessary or undue degradation to the environment.

The proposed action is in conformance with the Goals and Objectives of the Ely District Record of Decision and Approved Resource Management Plan (Ely RMP) (BLM 2008), which are: "To provide for the responsible development of mineral resources to meet local, regional, and national needs, while providing for the protection of other resources and uses", (BLM 2008; page 92), and "To respond to public, local, state, and federal agency needs for land for community development, utility and other associated rights-of-way, communication sties, and other allowed uses of BLM-administered lands." (BLM 2008, page 66). In addition, "Timing limitations indicate that a leased area generally is open to development activities except during a specified period of time to protect identified resource values such as "wildlife" (BLM 2008; page 92).".

The proposed action is also in conformance with the following program-specific management decisions:

- MIN-2: Open to Leasing — Allow leasing on approximately 6.0 million acres open to leasing subject to existing laws, regulations, and formal orders and the terms and conditions of the standard lease form. A lease notice would be attached, where applicable, to inform potential lessees of important resource issues under existing laws and regulations that may result in delays associated with subsequent permitting and appropriate mitigation of those resource concerns.

- MIN-17: Open to mineral materials — Allow disposal of mineral materials on approximately 9.9 million acres of federal mineral estate, subject to best management practices

- MIN-18: Space mineral material sites appropriately to accommodate public and private needs while preserving environmental qualities.

- LR-43: Coordinate, as appropriate, with appropriate local, state, and federal agencies on siting and construction for rights-of-way proposals. (BLM 2008; page 71).

In addition, review of management decisions for other resources and concerns that would possibly be impacted by the project was conducted, and it was determined that approval of the proposed action is in conformance with the Ely RMP.

2.6.2. Relationship to Statutes, Regulations, or other Plans:

This action is consistent with federal, state and local regulations, policies, and programs to the maximum extent possible. This includes federal policies for the Energy Act of 2005, Federal Land Policy and Management Act, National Historic Preservation Act, Endangered Species Act, and Clean Water Act, and state plans and policies for the management of mineral and water resources, conservation of sensitive wildlife species and management of game, and the Road Maintenance Agreement (RMA) between BLM and Lincoln County.

The proposed action falls within the Basin and Range National Monument. The proclamation (Appendix G) closes this region to mineral entry except for valid existing rights. Makoil held an oil and gas lease on this parcel prior to the monument designation, and therefore have a valid existing right to access and develop their lease. The original proposal requested development of turnouts along lower hole road and a new gravel pit in Coal Valley. These actions have been eliminated from the Proposed Action in order to comply with proclamation.

Chapter 3. Affected Environment/Environmental Impacts

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3.1. Introduction:

This chapter presents the existing environment (i.e., the physical, biological, social, and economic values and resources) of the impact area, the issues analyzed, the impacts to the analyzed resources, and mitigation that could be applied that would reduce those impacts. Mitigation proposed in this section could be included in the Finding of No Significant Impact to prevent potentially significant impacts. Application of the mitigation measures to the proposed action would then be carried forward into the Decision Record as a condition of approval of the proposal.

While many potential issues may arise during scoping, not all of them warrant analysis. Issues raised through scoping are analyzed if:

- Analysis of the issue is necessary to make a reasoned choice between alternatives.
- The issue is significant (an issue associated with a significant impact, such as a potential violation of a law imposed to protect the environment).
- Analysis of the issue is necessary to determine if the direct or indirect impacts are themselves significant, or if it would add a measurable incremental impact to past, present and reasonably foreseeable actions that could have a cumulatively significant impact.

Potential impacts to the following resources/concerns were evaluated in accordance with criteria listed above to determine if detailed analysis was required. Consideration of some of these items is to ensure compliance with laws, statutes or Executive Orders that impose certain requirements upon all Federal actions. Other items are relevant to the management of public lands in general, and to the Ely District BLM in particular.

In response to the preliminary issues identified, further surveys/studies were conducted and reports prepared. Cultural surveys were prepared and used to determine the scope of this document.

Many times a project would have some degree of effect upon a resource or concern, but that effect doesn't approach any threshold of significance, nor does it increase cumulative impacts by a measurable increment. Such effects are described as "negligible" in the rationale for dismissal from analysis.

The following table documents the issues evaluation or rationale for dismissal from analysis:

Table 3.1. Issues Dismissed from Analysis

Resource/ Concern	Issue(s) Analyzed? (Y/N)	Rationale for Dismissal from Detailed Analysis or Issue(s) Requiring Detailed Analysis (Grouped in accordance with the format of the Ely RMP)
Air Quality*	N	The proposed project is not expected to produce emissions at levels that would require analysis per the standards set forth by the Environmental Protection Agency.
Water Quality, Drinking/Ground*	N	The design features and Nevada State Laws, which the proponent is required to follow, should prevent any potential impacts. Therefore, this project should have no effect on water resources.
Water Resources (Water Rights)	N	The proposed water source is dedicated as stock use for one of the permittees. Makoil is requesting a water right for use developing the well and will provide a copy of the permit as a condition of approval. Therefore, no further analysis is required.

Farmlands, Prime and Unique*	N	Not Present
Soils/Watershed	Y	Resource analyzed in detail below.
Forest Health*	N	Project does not meet HFRA criteria.
Vegetation, Forest/ Woodland and other vegetative products (Native seeds, yucca and cactus plants)	Y	Resource analyzed in detail below.
Wetlands/Riparian Zones*	N	The closest spring (Seaman Spring) is approximately six miles from the proposed gravel pit, and therefore does not require analysis.
Fish and Wildlife	Y	Resource analyzed in detail below.
Migratory Birds*	Y	Resource analyzed in detail below.
USFWS Listed (or proposed for listing) Threatened or Endangered Species or critical habitat.	N	No habitat for federally listed or proposed species is present within the action area.
Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered.	Y	Resource analyzed in detail below.
Special Status Plant Species, other than those listed or proposed by the USFWS as Threatened or Endangered.	N	Resource not present in project areas.
Wild Horses	N	The access road falls within the Seaman Range Herd Area (HA). This area is not managed for wild horses. Detailed analysis is not required.
Cultural Resources *	N	Ground surveys were conducted on all project areas according to BLM standards. No cultural resources were discovered.
ACECs designated for Cultural Resources*	N	No ACECs are present in the project area.
Heritage Special Designations (Historic Trails, Archaeological Districts and Areas)	N	No Heritage Special Designations are present.
Paleontological Resources	N	No Paleontological resources are present.
Visual Resources	Y	Resource analyzed in detail below.
Land Uses	Y	Resource analyzed in detail below.
Transportation/ Access	N	The proposed action and alternatives would maintain or improve existing roads that access the project area. These roads would remain open throughout the operation and after the project is complete and therefore, have no effect on transportation or access.
Recreation Uses including Back country Byways, Caves, Rockhounding Areas	Y	Resource analyzed in detail below.

Grazing Uses/Forage	N	The South Coal Valley allotment encompasses over 40,000 acres of which less than 0.1 percent would be impacted by the activities associated with any alternative. Surface disturbance is proposed salt desert shrub vegetation type; however, the loss of these vegetative communities as a result or the proposed action or alternatives would have a negligible effect on the grazing capacity of the allotment. Design features or conditions of approval may be implemented to avoid impacts to cattle grazing such as exclusionary fences around drilling fluids. The gravel source occurs in the South Hiko/Six Mile allotment which covers more than 21,000 acres. The gravel pit occurs in a black brush community. The limited disturbance (less than 5 acres) would have negligible affects to grazing in this allotment.
Mineral Resources	N	Mineral Resources are present but not affected by this project.
Floodplains*	Y	The FEMA floodplains map denotes this area as unmapped. Mapping would be necessary to determine any potential impacts to floodplains.
Fuels	N	The limited vegetation and minimal surface disturbance (less than 10 acres) is not expected to affect fuels in Coal Valley.
Emergency Stabilization and Rehabilitation (ES&R)	N	The project is not within or near a recent burn and therefore is not expected to affect any ES&R projects.
Non-Native Invasive and Noxious Species *	Y	No Noxious weeds were found within or immediately adjacent to the project area. For more specific information see the Weed Risk Assessment located in Appendix E. The Weed Risk Assessment also contains a list of best management practices and measures for reducing the risk of impacts from weeds.
Wilderness/ Wilderness Study Area(WSA)*	N	Not present: there are no Wilderness or WSAs within or immediately adjacent to the project area; the nearest is Weepah Spring Wilderness, which is nine miles to the northeast of the project area.
Lands with Wilderness Characteristics	N	Not present: both the original 1979/1980 inventory and the updated 2014 inventory for the area found wilderness characteristics lacking throughout the project area.
Wild and Scenic Rivers	N	Not Present
Human Health and Safety*	N	Resource would not be affected by proposed action.
Native American Religious and other Concerns*	N	No cultural sites occur within the project area, and tribes have not raised any concerns at this time. Tribal consultation is on going.
Wastes, Hazardous or Solid*	N	A review of the current geospatial data did not reveal any known concerns or issues with Solid or Hazardous wastes. Any potential waste issues are covered by the waste management as covered in section 2.2.7 and 2.3.7.
Environmental Justice*	N	No minority or low-income groups would be disproportionately affected by health or environmental effects.
Socioeconomics	N	The proposed project would not result in substantial impacts to social or economic values and no further analysis is required.

*Nevada Supplemental Authority

3.2. General Setting:

The project site is located on Bureau of Land Management land in Coal Valley in central Lincoln County, Nevada. The site is located approximately 17 miles northwest of Hiko, Nevada. The proposed project site is located in a remote area used mostly for ranching operations and recreational activities. The proposed well pad site is on the Murphy Gap SE USGS topographic

map quadrangle, the access road from Nevada highway 318 is located in the Seaman Range on the Seaman Wash quadrangle, and the gravel pit is located in the Hiko quadrangle.

The proposed well pad location is at an elevation of approximately 4940 feet above mean sea level. The area receives approximately seven inches of precipitation a year, mostly in the form of snow. Map 1.2 depicts the general location of the proposed activities. Well pad designs and gravel pit designs can be found in Figures 2.1–2.3.

Upon leaving U.S. Highway 318, the project would utilize existing maintained unpaved roads to the site (Maps 1.1 and 1.2). The well pad site (Figures 2.1 and 2.3) is located adjacent to the existing road (less than 100 feet). The surface composition of the Seaman Wash Road is defined as both dirt and gravel. The surface composition of the Lower Hole Road is defined as dirt. The Lower Hole Road is considered a narrow road and does have several areas where the surface has degraded to fine silt.

The project area contains intermountain basins mixed salt desert scrub and microphytic playa sparse vegetation, according to SWReGAP vegetation data (NatureServe 2004; SWReGAP 2004). The proposed site is located in salt flats dominated by saltbrush. The roadsides and Coal Valley in general has been invaded by the non-native invasive plant, halogeton.

3.3. Resources/Concerns Analyzed

3.3.1. Soils/Watershed

3.3.1.1. Affected Environment

The drill pad, potential water well, and approximately 3.25 miles of the access route are located in a silty plain with an annual precipitation rate of 5-8". The United States Department of Agriculture-Natural Resources Conservation Service (USDA-NRCS), Major Land Resource Area (MLRA) 29, Ecological Site Description is defined as 029XY117NV, and is typically dominated by Bonneville saltbush *(Atriplex bonnevillensis)*, ricegrass *(Achnatherum hymenoides),* and shadscale *(Atriplex confertifolia)*. The soils of this site are very deep, well drained soils formed in alluvium and lacustrine deposits from mixed limestone and welded tuff. Surface textures are usually silt loams. They are moderately to strongly alkaline, have slow intake rates, available water capacity is moderate, and runoff is negligible or very low. Potential for sheet and rill erosion is slight. This soil is well drained and has a k-factor of .55 and is rated as highly erodible. Approximate ground cover (basal and crown) is 15 to 20 percent.

3.3.1.2. Impact Analysis

3.3.1.2.1. Alternative A

Under the proposed action, the drill pad would be located approximately 50 feet from the existing road and disturb approximately 5.7 acres of the surface. The spur road to the pad would disturb less than .05 acres. Top soil will be removed, stockpiled during drilling operations, and re-spread during reclamation. The sub-soils are likely to become compacted, which will hinder plant recovery. De-compaction will be required during reclamation. Soil loss from wind and water

erosion is likely to occur, but will be greatly reduced by hardening of the disturbed areas with gravel, berms, and seeding stockpiles with an appropriate seed mix.

The construction and use of an unlined reserve pit could have potential impacts to soils, and subsequently vegetation, if contaminants are mobilized in the soil through hydrologic action (McFarland et al 1994). However, the mobilization of contaminates depends largely on the chemical composition of contaminates and the soil properties such as clay content and moisture regime.

Recommended Mitigation Measures:

- Compacted soils must be ripped during reclamation.
- Berms and stockpiles should be seeded with an appropriate seed mix upon completion of the well pad.

3.3.1.2.2. Alternative B

Under Alternative B, the well pad would be relocated to immediately adjacent to the road and eliminate the need for an access road from the existing road. This would reduce the amount of disturbance at the drill pad by less than .05 acres.

The use of a lined reserve pit would reduce the likelihood of contaminants becoming mobilized in the soil.

The use of a closed-loop system and drying pad would further reduce the likelihood of contaminants being mobilized in the soil because the drilling materials would not be in fluid suspension while also in an open environment.

The use of a closed-loop system with fluid treatment and reuse and with the transport of waste materials from the site would eliminate the likelihood of contaminants becoming mobilized in the soil.

3.3.1.2.3. Alternative C

No disturbance would occur under the No Action Alternative.

3.3.2. Vegetation, Forest/Woodland and other vegetative products (Native seeds, yucca and cactus plants)

3.3.2.1. Affected Environment

The drill pad, potential water well, and approximately 3.25 miles of the access route are located within ecological site RO29XY117NV. This ecological site is typically dominated by Bonneville saltbush *(Atriplex bonnevillensis)*, ricegrass *(Achnatherum hymenoides),* and shadscale *(Atriplex confertifolia)*. Potential vegetative composition is about 20% grasses, 5% forbs and 75% shrubs. Approximate ground cover (basal and crown) is 15-20%. Species likely to invade this site are cheatgrass, annual mustards, halogeton, and Russian thistle.

3.3.2.2. Impact Analysis

3.3.2.2.1. Alternative A

Under the proposed action, all vegetation within the surface disturbance would be removed. Any cactus or yucca would be salvaged in accordance in IM 2011–10 (Appendix C) and put back during reclamation.

The drill pad would be located approximately 50 feet from the existing road and disturb approximately 5.7 acres of the surface. Vegetation outside the area of surface disturbance could be impacted by the migration of drilling fluid contaminates from the reserve pit (McFarland et al 1994). The spur road to the pad would disturb less than .05 acres. The total amount of disturbance is not likely to have a significant impact on the vegetation community overall. Weed species likely to invade disturbed sites are cheatgrass *(Bromus techtorum)*, annual mustards *(Brassicaceae spp.)*, halogeton *(Halogeton glomeratus)*, and Russian thistle *(Salsola kali)*.

The recovery of native species during reclamation may be hindered if invasive weeds invade disturbed sites or if soils become compacted. Invasion is not likely to occur while disturbed sites are being used. However, the margins of disturbed areas, as well as soil stockpiles, are likely to become invaded by weed species. The seeding of the margins of disturbed areas and soil stockpiles with an appropriate seed mix will reduce the likelihood and ability of weeds species to become established. This, in addition to the stipulations identified in the Weed Risk Assessment, will greatly reduce the ability for weed species to develop a seed bank which would be released during reclamation and hinder successful establishment of desired species. Compaction would be remedied by ripping of the affected soils.

Recommended Mitigation Measures:

- Margins of disturbed areas and soil stockpiles should be seeded with an appropriate seed mix
- Compacted soils must be ripped during reclamation.

3.3.2.2.2. Alternative B

Under Alternative B, the well pad would be relocated to immediately adjacent to the road and eliminate the need for an access road from the existing road. This would reduce the amount of disturbance at the drill pad by less than .05 acres.

The use of a lined reserve pit would reduce the likelihood of contaminants becoming mobilized in the soil and uptake by plants.

The use of a closed-loop system and drying pad would further reduce the likelihood of contaminants being mobilized in the soil because the drilling materials would not be in fluid suspension while also in an open environment.

The use of a closed-loop system with fluid treatment and reuse and with the transport of waste materials from the site would eliminate the likelihood of contaminants becoming mobilized in the soil.

3.3.2.2.3. Alternative C

There would be no effects to vegetation under alternative C

3.3.3. Fish and Wildlife

3.3.3.1. Affected Environment

No fish species are present within the project area. The project area may provide habitat for a variety of mammal, bird, and reptile species. BLM sensitive species and migratory birds are discussed in later sections of this document. According to data from the Ely District Resource Management Plan, Nevada Natural Heritage Program, and Nevada Department of Wildlife (NDOW) data, the following species may inhabit the project and surrounding areas: desert horned lizard (*Phyrnosoma platyrhinos*), longnose leopard lizard (*Gambelia wislizenii*), American badger (*Taxidea taxus*), and pronghorn antelope (*Antelocapra americana*). These data are not comprehensive, and additional species not listed here may be present within the project area.

The project area occurs within NDOW hunt unit 133. Several small volume wildlife water developments (Seaman Wash Series 1 through 8) occur approximately five to eight miles southeast of the project area. Two large volume wildlife water developments (Coal Valley #1 and #2) are located on the east side of the valley. Coal Valley #2 is approximately 6 miles east of the proposed drill pad. Coal Valley #1 is approximately 11 miles northeast of the proposed drill pad.

3.3.3.2. Impact Analysis

3.3.3.2.1. Alternative A

Some disturbance and displacement to wildlife species is anticipated in and around the project area. Wildlife disturbance and displacement is also expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, effects would be limited temporally to approximately 21 days. If the well is placed into production, effects would be greater and could last for several years.

Impacts to wildlife and associated habitat would likely be greatest from this alternative due to indirect impacts to a small island of vegetation between the roadway and project area. Wildlife would likely be displaced from this small area of vegetation, and the vegetation may be degraded due to dust and noise associated with the project.

This alternative includes use of an unlined open reserve pit. The presence of oil and other substances, such as surfactants, could pose a hazard to wildlife species. Loss of insulation due to fur coated with oil can pose a risk of hypothermia to mammal species that may enter the pit. The reserve pit could pose an entrapment hazard to small and large wildlife species if the sides are steep and/or lined with a slippery material. Wildlife entrapment and mortality is anticipated due to an open unlined reserve pit under this alternative.

Noise and other elements of human presence in wildlife habitats could impact various wildlife species by causing disturbance and/or displacement. Energy expenditure from displacement could be detrimental to some species. Movement from displacement could bring animals into occupied habitat, increasing competition for available resources. For example, a study by Easterly

et al. (1991) of mule deer and pronghorn antelope in relation to oil and gas drilling and well maintenance activities found: "Displacement of animals may result in use of sub-optimal winter habitat, overcrowding, increase intraspecific competition, deterioration of habitat, and decreased physical condition of the population." Initial results from a 5-year study of pronghorn antelope found reduced usage, avoidance, and even abandonment of some habitat areas in proximity to oil and gas facilities (Berger et al. 2006).

Ground disturbance has the potential to injure or kill individual ground-dwelling animals. Reduction or degradation of habitat quantity and/or quality (including food resources and cover) could result from this alternative. Ground disturbance and activities associated with oil and gas have the potential to introduce invasive plant species to communities that currently lack invasive plants (Blumenthal 2005). Noxious weeds could become established and spread, which also diminishes habitat quality. Dust from ground disturbance could alter photosynthesis and /or reproduction of vegetation that provides wildlife forage and cover in the surrounding areas.

Recommended Mitigation Measures:

- The reserve pit would be fenced and netted in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.

- Any facilities will be closed with screens or otherwise to prevent birds, bats and other wildlife from entering in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.

- Appendix A, Section 2 (Fluid Minerals Lease Notices and Stipulations) of the Ely RMP (BLM 2008b) contains a Big Game Timing Stipulation which states, "No surface activity would be allowed within big game calving/fawning/kidding/lambing grounds from April 15 through June 30."

3.3.3.2.2. Alternative B

Impacts to wildlife under this alternative would be less in spatial area than Alternative A. The small patch of vegetation between the roadway and project would be encompassed by the project area. The drainage area and associated dirt reservoir, which may serve as a temporary water source for wildlife, would be impacted less by this alternative.

Some of the environmental consequences described under Alternative A would not occur under this alternative. A closed loop system would pose the least amount of risk to wildlife species. The use of a closed loop system rather than an unlined reserve pit would avoid entrapment and mortality of wildlife.

3.3.3.2.3. Alternative C

No impacts to wildlife would occur from the no action alternative.

3.3.4. Migratory Birds

3.3.4.1. Affected Environment

The following data reflect survey blocks and/or incidental sightings of bird species within the project boundaries from the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007). These data represent birds that were confirmed, probably, or possibly breeding within or near the project area as well as non-breeders. These data are not comprehensive, and additional species not listed here may be present within the project area. After each species, the breeding status within that survey block is listed. BLM sensitive bird species are included in a later section of this document.

Table 3.2. Bird Species in Survey Block 9312 (approximately three miles south of project area)

Common Name	Scientific Name	Breeding Status
barn swallow	*Hirundo rustica*	presumed non-breeder
black-throated sparrow	*Amphispiza bilineata*	confirmed
cliff swallow	*Petrochelidon pyrrhonota*	presumed non-breeder
common raven	*Corvus corax*	possible
horned lark	*Eremophila alpestris*	probable
Northern mockingbird	*Mimus polyglottos*	possible
sage sparrow	*Amphispiza belli*	confirmed

Table 3.3. Bird Species in Survey Block 9235 (approximately three miles southwest of project area)

Common Name	Scientific Name	Breeding Status
blue-gray gnatcatcher	*Polioptila caerulea*	probable
black-headed grosbeak	*Pheucticus melanocephalus*	possible
black-throated sparrow	*Amphispiza bilineata*	confirmed
Bullock's oriole	*Icterus bullockii*	presumed non-breeder
common raven	*Corvus corax*	confirmed
house finch	*Carpodacus mexicanus*	probable
horned lark	*Eremophila alpestris*	confirmed
mourning dove	*Zenaida macroura*	possible
Northern mockingbird	*Mimus polyglottos*	confirmed
sage sparrow	*Amphispiza belli*	confirmed
turkey vulture	*Cathartes aura*	possible
Western meadowlark	*Sturnella neglecta*	confirmed
white-crowned sparrow	*Zonotrichia leucophrys*	presumed non-breeder
Wilson's warbler	*Wilsonia pusilla*	presumed non-breeder

3.3.4.2. Impact Analysis

3.3.4.2.1. Alternative A

Some disturbance and displacement to migratory bird species is anticipated in and around the project area. Additional disturbance and displacement is expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, effects would be limited temporally to approximately 21 days. These impacts could be less

if the project is implemented during the non-breeding season for migratory birds (generally September to February).

If the well is placed into production, effects would be greater and could last for several years.

Impacts to migratory birds and associated habitat would likely be greatest from this alternative due to indirect impacts to a small island of vegetation between the roadway and project area. Birds would likely be displaced from this small area of vegetation, and the vegetation may be degraded due to dust and noise associated with the project. The use of an open unlined reserve pit could result in entrapment and mortality of migratory birds.

This alternative includes use of an unlined open reserve pit. This reserve pit in addition to the well and impacts from ancillary facilities (i.e. roads and gravel pit) could affect migratory birds. The presence of oil and other substances, such as surfactants, could pose a hazard to migratory bird species. Loss of insulation due to feathers coated with oil can pose a risk of hypothermia to bird species that may enter the pit. The reserve pit could pose an entrapment hazard to birds if the sides are steep and/or lined with a slippery material. Extreme pH levels, if present in the reserve pit, could be detrimental to waterfowl (Russel et al. 1981). A study of grassland birds found lower bird abundance in close proximity to active well pads and recommended 1) noise reduction at well pads, 2) limiting vegetation disturbance near roads and pads, 3) maintaining existing perch sites, and 4) limiting road construction (Lawson et al. 2011).

Recommended Mitigation Measures:

- The reserve pit would be fenced and netted in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.
- Any facilities will be closed with screens or otherwise to prevent birds, bats and other wildlife from entering in accordance with Washington Office Instruction Memorandum 2013–033; see Appendix B.

3.3.4.2.2. Alternative B

Impacts to migratory birds under this alternative would be less in spatial area than Alternative A. The small patch of vegetation between the roadway and project would be encompassed by the project area. The drainage area and associated dirt reservoir north of the project area, which may serve as a temporary water source for migratory birds, would be impacted less by this alternative.

Additional measures and Best Management Practices would be implemented, which would lessen impacts to migratory birds under this alternative. The use of a closed loop system with no exposed fluids would be less likely to attract migratory birds to the project area. This would avoid migratory bird entrapment and mortality at the site from exposed fluids. Additionally, the requirement for screening over open vents would avoid the threat of entrapment and mortality to migratory birds at the project area.

Some of the environmental consequences described under Alternative A would not occur under this alternative. A closed loop system would pose the least amount of risk to bird species.

3.3.4.2.3. Alternative C

No impacts to migratory birds would occur from the no action alternative.

3.3.5. Special Status Animal Species, other than those listed or proposed by the USFWS as Threatened or Endangered

3.3.5.1. Affected Environment

According to data from the Ely RMP, Nevada Natural Heritage Program, NDOW data, and the Atlas of the Breeding Birds of Nevada (Floyd et al. 2007), the following BLM sensitive species may inhabit the project and surrounding areas. These data are not comprehensive, and additional species not listed here may be present within the project area.

Table 3.4. BLM Sensitive Animal Species

Common Name	Scientific Name	Breeding Status
ferruginous hawk	*Buteo regalis*	confirmed
golden eagle	*Aquila chrysaetos*	possible
Brewer's sparrow	*Spizella breweri*	confirmed
loggerhead shrike	*Lanius ludovicianus*	probable
sage thrasher	*Oreoscoptes montanus*	confirmed
burrowing owl	*Athene cunicularia*	unknown
dark kangaroo mouse	*Microdipodops megacephalus*	not applicable

3.3.5.2. Impact Analysis

3.3.5.2.1. Alternative A

Some disturbance and displacement to BLM sensitive species is anticipated in and around the project area. Additional disturbance and displacement is expected due to ancillary facilities and activities (water well, gravel pit, and access roads). If the well is not placed into production, effects would be limited temporally to approximately 21 days. These impacts could be less if the project is implemented during the non-breeding season for birds (generally September to February).

If the well is placed into production, effects would be greater and could last for several years.

Impacts to BLM sensitive species and associated habitat would likely be greatest from this alternative due to indirect impacts to a small island of vegetation between the roadway and project area. Individuals would likely be displaced from this small area of vegetation, and the vegetation may be degraded due to dust and noise associated with the project.

Impacts to Special Status Animal Species would be similar to those described under the Fish and Wildlife and Migratory Birds sections of this EA.

Decreased recruitment can result from oil and gas development disturbance. For example, a study on ferruginous hawk nests in proximity to disturbance fledged less young than non-disturbed areas (White and Thurow 1985).

Recommended Mitigation Measures:

- The project will adhere to "Protecting Burrowing Owls at Construction Sites in Nevada's Mojave Desert Region."

- Due to the potential for dark kangaroo mouse within the project area and ancillary facility areas, a small mammal survey will be required prior to ground disturbing activity.

3.3.5.2.2. Alternative B

Impacts to BLM sensitive species under this alternative would be less in spatial area than Alternative A. The small patch of vegetation between the roadway and project would be encompassed by the project area. The drainage area and associated dirt reservoir, which may serve as a temporary water source for sensitive species, would be impacted less by this alternative.

Additional measures and Best Management Practices would be implemented under this alternative which would lessen impacts to wildlife and associated habitat. Some of the environmental consequences described under Alternative A would not occur under this alternative. A closed loop system would pose the least amount of risk to special status species.

3.3.5.2.3. Alternative C

No impacts to BLM sensitive species would occur from the no action alternative.

3.3.6. Visual Resources Management

Visual resources are identified through the Visual Resource Management (VRM) inventory. This inventory consists of a scenic quality evaluation, sensitivity level analysis and delineation of distance zones. Based on these factors, BLM administered lands are placed into four visual resource inventory classes: VRM Class I, II, III, and IV. Class I and II are the most sensitive, Class III represents a moderate sensitivity and Class IV is of the least sensitivity (see table below). VRM classes serve two purposes: (1) as an inventory tool that portray the relative value of visual resources in the area, and (2) as a management tool that provides an objective for managing visual resources.

3.3.6.1. VRM Classification Objectives

Table 3.5. VRM Classification Objectives

Class	Visual Resource Objective	Change Allowed (Relative Level)	Relationship to the Observer
Class I	Preserve the existing character of the landscape. Provide for natural ecological changes; however it does not preclude very limited management activity.	Very Low	Activities must not attract attention.
Class II	Retain the existing character of the landscape. The level of change to the characteristic landscape should be low.	Low	Activities may be seen, but should not dominate view.
Class III	Partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate.	Moderate	Activities may attract attention, but should not dominate the view.
Class IV	Provide for management activities, which require major modification of the existing character of the landscape. the level of change to the characteristic landscape can be high.	High	Activities may attract attention, may dominate the view.

3.3.6.2. Affected Environment

The proposed project area falls within VRM Classes III and IV. The objective of Class III is to partially retain the existing character of the landscape. The level of change to the characteristic landscape should be moderate. Management activities may attract attention but should not dominate the view of the casual observer. The objective of Class IV is to provide for manament activities, which require major modification of the existing character of the landscape. The level of change to the characteristic landscape can be high. Management activities may attract attention, and may dominate the view.

Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape. Landscape colors in the area consist mainly of the shale green and shadow gray. Vegetation is present throughout the project area. The horizontal lines of the existing roads are a moderate to weak contrast to the landscape of the valley.

Access to the proposed well pad, is approximately 17 miles northwest of Hiko and would not be visible from Highway 318. Access to the gravel source is approximately 1.5 miles south of Hiko and approximately a quarter mile west of Highway 318. Gravel operations may be visible from Highway 318 and Hiko.

3.3.6.3. Impact Analysis

Residual impacts on visual resources could remain for ten, twenty or more years following cessation of operations and reclamation until native vegetation is completely reestablished. Areas where reclamation is not complete or successful would continue to contrast with visual resources. Any evidence of reclaimed roads may invite continued use by the general public, perpetuating linear intrusions in the characteristic landscape.

3.3.6.3.1. Alternative A

The proposed action would be in conformance with the VRM Class III and Class IV objectives when field manager approved mitigation measures (listed below) are incorporated by the proponent into the project proposed action and with reclamation. The proposed project may attract attention of the casual observer travelling on the Mail Summit road. The landscape has minimal capability to absorb visual impacts, so a good color selection would be important.

The proposed project would result in short-term and long-term visual impacts, affecting the elements of line and color. Short-term visual impacts would primarily be related to construction and drilling activities. Horizontal and shallow diagonal lines from the drill roads and the exploration process would create moderate to strong line contrasts with the characteristic landscape. The visual contrasts would increase within the area as the removal of vegetation associated with road and drill pad construction would expose the lighter soils creating a moderate to strong visual contrast with the surrounding vegetation for many years to come. This contrast would remain until vegetation is sufficiently established to blend in with the surrounding undisturbed vegetation. In addition, drilling activity would typically occur 24-hours per day and lighting associated with nighttime drilling activities may be visible from long viewing distances.

Once construction activities are completed, long-term landscape contrasts would result from the presence of well pads, pipelines, roads, and production facilities. These landscape modifications would yield a more industrialized visual setting. Short-term and long-term visual disturbances

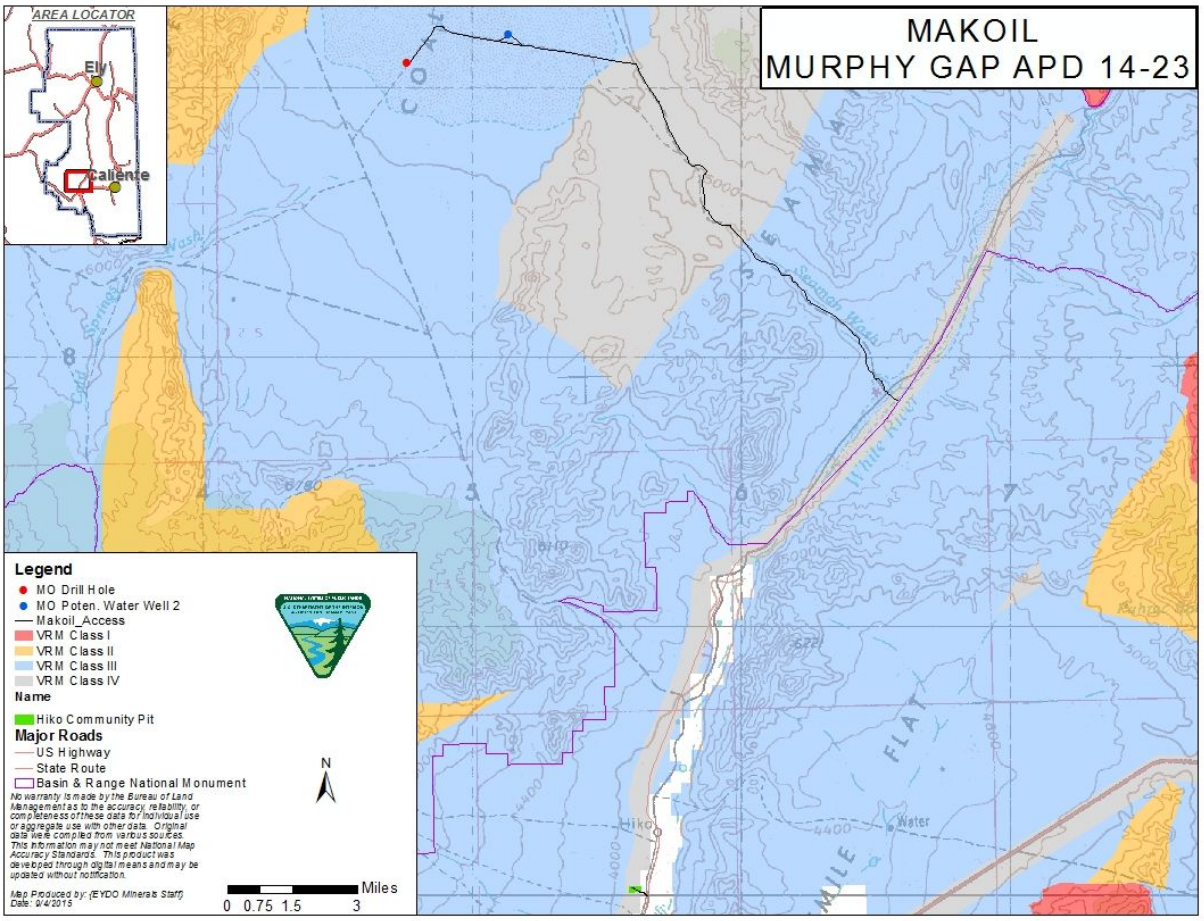
would be mitigated thru the proposed actions design features, reclamation, and re-seeding activities to minimize both short-term and long-term visual impacts.

Recommended Mitigation Measures:

- Paint facilities to blend with the landscape (BLM can help with recommended colors)
- Minimize the area to be cleared of vegetation as much as possible (e.g. constructing a pad that is not necessarily rectangular in shape)
- Use low profile construction for facilities
- Stain the soils to reduce the long term visual impacts
- Use filtered lights that point toward the ground at night to reduce the visual impact to night skies.
- Site facilities close together, when possible, and in a way that minimizes the visual impacts (e.g. grouping buildings blocks a smaller portion of the natural landscape than spreading buildings apart.
- Site production facilities close together and near the entrance to minimize the footprint for production and allow more interim reclamation that will reduce the visual impacts.

3.3.6.3.2. Alternative B

The disturbance would occur on the same level and in the same area as Alternative A. Impacts to VRM under this alternative would be the same as Alternative A



The Map above provides the VRM Classes, relative to the proposed project.

Map 3.1. The Map below provide the VRM Classes, relative to the proposed project.

3.3.7. Land Uses

This section describes authorized rights-of-way (ROW) and other realty actions within the vicinity of the project.

3.3.7.1. Affected Environment

There are five authorized ROW's within a half mile of the unpaved access route and the lease area:

- N-74959 Lincoln County Telephone System (buried fiber optic line near Highway 318)
- N-11748 Nevada Department of Transportation (Highway 318)
- N-84133 US Air Force/Nellis Air Force Base (training communication site)
- N-57490 Lincoln County (Seaman Wash Road)

- N-88977 Lincoln County Water District (rain monitoring/sampling)

There are two authorized ROW's within a half mile of the gravel source, Hiko Community Pit.

- N-05985–01 Lincoln County (landfill) (Recreation & Public Purposes Lease expired 2003, pending further action)
- N-89731 – Lincoln County (transfer station)

The RMA (BLM and Lincoln County 2012) allows Lincoln County to maintain the Lower Hole Road until a ROW grant is issued.

3.3.7.2. Impact Analysis

3.3.7.2.1. Alternative A

ROW's N-74959 and N-84133 would not be impacted by the proposed activity. Makoil would travel on N-11748 (Highway 318) to access the Seaman Wash Road and the lease area, however this travel would have minimal impact to the paved ROW used by the public, including large truck traffic. ROW N-88977 may potentially be impacted by dust from the proposed activity.

The most direct impact would be to N-57490, Seaman Wash Road. The surface composition of the Seaman Wash Road is defined as both dirt and gravel. Although maintenance responsibility for this road belongs to Lincoln County, Makoil and Lincoln County would have a maintenance agreement to remedy impacts to the road caused by Makoil permitted activity. Maintenance of existing roads outside of the existing ROW or significantly changing the road condition or surface composition would be closely coordinated with BLM and may require additional NEPA analysis.

The Lower Hole Road is not currently authorized under a ROW, however the RMA (BLM and Lincoln County 2012) allows for maintenance of the existing road in the interim. Graveling the western access to the water well would not be allowed as these requests would be considered additional disturbance and outside of the scope of the RMA (BLM and Lincoln County 2012). Makoil and Lincoln County would have a maintenance agreement to remedy impacts to the Lower Hole Road caused by Makoil activities. Maintenance of existing roads outside of the existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

3.3.7.2.2. Alternative B

The access route and lease area are essentially the same under Alternative A and Alternative B. Impacts to the five ROW's would be the same as described above in 3.3.7.2.1

Gravel maintenance of the easterly access road to the water well and the western end of the road as it meets the lease area would be allowed in order to maintain the integrity of these roads that are not identified in the RMA. Maintenance outside the existing disturbance or significantly changing the road condition or surface material would be closely coordinated with BLM and may require additional NEPA analysis.

The gravel source, Hiko Community Pit, is located in the vicinity of Lincoln County's Recreation & Public Purposes (R&PP) Act Lease for a landfill (N-005985–01). Acceptance of waste in this

landfill was halted in 1998. The lease expired in 2003 and is being reviewed for future needs under the R&PP Act authority. In lieu of the landfill, the BLM authorized a transfer station (N-89731) at the same location, to Lincoln County in 2012. It is unclear if the access road to the Hiko Community Pit is included in the R&PP lease or the ROW for the transfer station. In any case, the public uses the access road, which passes through the R&PP lease and transfer station ROW area. Given the short term needs for obtaining the gravel for well pad construction and intermittent road maintenance as well as the general public use of Hiko Community Pit, impacts to the two authorized ROW's are not expected.

3.3.7.2.3. Alternative C

Under this Alternative, there would be no impacts to the seven ROWs.

3.3.8. Recreation Uses including Back country Byways, Caves, Rockhounding Areas

3.3.8.1. Affected Environment

Recreation within the area is dispersed and low. There are no developed recreation facilities or sites in the area. The area is used primarily by ranchers and hunters. There is one yearly competitive motorcycle race Special Recreation Permit event that occurs approximately 12 miles to the southwest (Murphy Gap) area, so there would be no conflicts between organized recreation events and drilling activities. The proposed action would have minimal to no effect on recreation in the area.

3.3.8.2. Impact Analysis

3.3.8.2.1. Alternative A

Drilling activities would create disturbances that may interfere with recreational pursuits in this area. The sight and sound of exploration activities would potentially diminish the solitude, naturalness and primitive and unconfined recreation opportunities desired by many outdoor enthusiasts. There is one competitive Special Recreation Permit (SRP) event that occurs approximately eight miles to the southwest (Murphy Gap) area. The type of event (race) and the distance from the project would eliminate any potential conflicts between this organized recreation event and drilling activities.

3.3.8.2.2. Alternative B

The disturbance would occur on the same level and in the same area as Alternative A.

3.3.8.2.3. Alternative C

The disturbance would not occur under this alternative and therefore, there would be no effect to recreation.

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Chapter 4. Cumulative Impacts

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4.1. Introduction:

As required under the National Environmental Policy Act (NEPA) and the regulations implementing NEPA, this section analyzes potential cumulative impacts from past, present, and reasonably foreseeable future actions combined with the Proposed Action within the area analyzed for impacts in Chapter 3 specific to the resources for which cumulative impacts may be anticipated. A cumulative impact is defined as "the impact which results from the incremental impact of the action, decision, or project when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (federal or non-federal) or person undertakes such other actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time" (40 Code of Federal Regulations 1508.7).

The Cumulative Effects Study Area (CESA) for this project is defined by the South Coal Valley Allotment and a five mile buffer around the community pit.

4.2. Past, Present, and Reasonably Foreseeable Future Actions (RFFAs)

Past, present, and reasonably foreseeable future action would contribute to cumulative impacts in the project area. Past actions include grazing and range improvements; hunting, trapping, wildlife viewing; off road and all terrain vehicles use; rights-of-way grants, leases and land use permits; other forms of recreation; municipal water well development; and oil and gas exploratory drilling. Present actions include all of the past actions except for new water well development and oil and gas exploration. All past actions are also reasonably foreseeable future actions. The disturbances related to these individual activities are minor, mostly temporary, and tend to occur randomly in time.

4.3. Cumulative Impact Analysis

A comprehensive analysis of cumulative impacts are analyzed in the Ely Proposed Resource Management Plan/Final Environmental Impact Statement (November 2007) on pages 4.28–1 to 4.28–88. Typical oil and gas activities, including exploration, wildcat drilling, production and field development, and abandonment, are described in the reasonable foreseeable development scenario (RFD) of that document and are incorporated by reference into this environmental analysis. The reasonable foreseeable development scenarios anticipate 8,400 acres of disturbance and as many as 448 wells drilled for oil and gas exploration and development, (p. 4.36–1). Since approval of the Ely District RMP in August 2008, 18 APDs have been approved, of which, two or less have been permitted but not drilled. The proposed action is approximately 5.7 acres of disturbance, well within the scope of the document.

Cumulative effects of the Proposed Action in combination with the past, present, and RFFAs may involve direct short-term effects to wildlife through habitat loss and reduction of vegetation cover. Successful revegetation as proposed should offset the direct effect of short-term displacement to wildlife, and special status species in the long term.

Any new impacts from expanded activities such as additional wells or mining expansion, would be addressed through additional site-specific NEPA analysis that includes the cumulative impacts associated with exploration and development of potential oil and gas resources.

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Chapter 5. Consultation and Coordination:

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5.1. Introduction

The issue identification section of Chapter 3 provides the rationale for issues that were considered but not analyzed further and identifies those issues analyzed in detail in Chapter 3. The issues were identified through the public and agency involvement process described in sections 5.2 and 5.3 below.

5.2. Persons, Groups, and Agencies Consulted

Table 5.1. Persons, Groups, and Agencies Consulted

Name	Purpose & Authority for Consultation or Coordination	Findings andConclusions
Nevada State Historic Preservation Office (SHPO)	Consultation for undertakings as required by the National Historic Preservation Act (16 USC 1531)	The cultural survey report was sent to SHPO with a determination of no adverse effect. A concurring response was received on June 1, 2015. Consultation is therefore considered to be closed.
Confederated Tribes of the Goshute Reservation, NV-UT, Duckwater Shoshone Tribe of the Duckwater Reservation, NV, Ely Shoshone Tribe of Nevada, Te-Moak Tribe of the Western Shoshone Indians of Nevada; Elko Band Council; South Fork Band Council; Battle Mountain Band Council, Paiute Indian Tribe of Utah; Indian Peaks Band of Paiutes; Shivwits Band of Paiutes, Moapa Band of Paiute Indians of the Moapa River Indian Reservation, Las Vegas Paiutes Tribe of the Las Vegas Indian Colony, and the Yomba Shoshone Tribe of the Yomba Indian Reservation, NV	Consultation for undertakings as required by Section 106 of the National Historic Preservation Act (16 USC 470f)	Consultation is ongoing. Tribal consultation thus far is described in sections 1.4 and 5.3.
Nevada Department of Wildlife	Programs carried out for conservation and rehabilitation involve	Coordination between BLM and NDOW is ongoing.

Name	Purpose & Authority for Consultation or Coordination	Findings andConclusions
	cooperation between the Department of Interior and the States under the Sikes Act of 1974, as amended (16 USC 670 et seq.).	

5.3. Summary of Public Participation

The Notice of Staking (NOS) was distributed to agencies, tribes, and posted in the Caliente Field Office Public Room in July 2014. BLM received the APD on July 31, 2014 which was later determined complete in November 2014. The APD was made available in the public room on July 31, 2014 and remains available to the public.

The Ely District Tribal Coordinator and Caliente Field Office Archaeologist led a field trip for the Dusckwater Shoshone Tribe of the Duckwater Reservation on August 14, 2014. Letters were sent to the tribes (listed in Table 5.1) on June 23, 2015 notifying them of the project and requesting consultation on any potential issues. No responses have been received to date.

During preparation of the EA, the public was notified of the proposed action by posting the project on the NEPA register. A public comment period was offered between *September 14, 2015* and *September 25, 2015*. The Public comment period was announced on the Ely District website, the project website, a press release was sent out, the press release was posted in the public room at the Caliente Field Office, and postcards were sent to interested or affected parties.

5.4. List of Preparers

This section discloses the BLM staff who were involved in preparing this analysis. There was no assistance preparing this document from non-BLM personnel.

Table 5.2. List of BLM Preparers

Name	Title	Responsible for the Following Section(s) of this Document
Carissa Shilling	Geologist	Minerals
Emily Simpson	Wilderness Planner	Wilderness/WSA, Lands with Wilderness Characteristics
Alicia Styles	Wildlife Biologist	Fish and Wildlife, Migratory Birds, Threatened and Endangered Species, BLM Special Status Plant and Animal Species
Daniel Condie	Range Specialist	Grazing Uses/Forage
Elizabeth Domina	Outdoor Recreation Planner	Visual Resources, Transportation, and Recreation Uses
Cameron Boyce	Natural Resource Specialist	Farmlands (Prime and Unique), Soils/Watershed, Wetlands/Riparian Zones, Floodplains, and Non-native Invasive and Noxious Species.
Ruth Thompson	Wild Horse and Burro Specialist	Wild Horses
Erica Husse	ES&R Specialist	ES&R
Kyle Teel	Fuels Specialist	Fuels
Elvis Wall	Native American Coordinator	Native American Religious and other Concerns, Tribal Consultation
Randall Johnson	District HAZMAT Lead	Wastes (Hazardous and Solid)
Tom Olsen	Hydrologist	Water Quality, Water Resources

Nick Pay	Planning and Environmental Coordinator	Land Use Plan Conformance, Air Quality, Environmental Justice, Human Health and Safety, Socioeconomics
Alicia Hankins	Realty Specialist	Land Uses

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Bibliography

43 CFR, 2009. Title 43 Code of Federal Regulations, Part 1000 to End.

Blumenthal, D. 2005. Interrelated causes of plant invasion. Science. 310. 243-244..

Berger, J., K. Murray Berger and J. Beckmann. 2006. Wildlife and Energy Development: Pronghorn of the Upper Green River Basin – Year 1 Summary. Wildlife Conservation Society, Bronx, NY..

BLM 2007. Ely Proposed Resource management Plan/Final Environmental Impact Statement. November, 2007. USDI-BLM. Ely District Office.

BLM 2008a. Bureau of Land Management National Environmental Policy Act Handbook (BLM NEPA Handbook H-1790–1).

BLM 2008b. Ely Proposed Resource Management Plan/Record of Decision and Approved Resource Management Plan. August, 2008. USDI-BLM. Ely District Office.

BLM and USDA, Forest Service, 2007. Surface Operating Standards and Guidelines for Oil and Gas Exploration and Development, The Gold Book: Fourth Edition, 76 p.

BLM 2011. Ely District Office Instruction Memorandum 010: Cacti and Yucca Salvage Stipulations for External Projects.

BLM and Lincoln County 2012. Road Maintenance Agreement between the United States Department of the Interior, Bureau of Land Management, Ely District and Lincoln County, Nevada by and through its Board of County Commissioners.

BLM 2013. Washington Office Instruction Memorandum 033: Fluid Minerals Operations — Reducing Preventable Causes of Direct Wildlife Mortality.

Easterly, T., A. Wood, and T. Litchfield. 1991. Responses of pronghorn and mule deer to petroleum development on crucial winter range in the Rattlesnake Hills. Unpublished Completion Report. Wyoming Game and Fish Department, Cheyenne.

Comer PJ, Faber-Langendoen D, Evans R, Gawler SC, Josse C, Kittel G, Menard S, Pyne M, Reid M, Schulz K, Snow K, and Teague J. 2003. Ecological Systems of the United States: A Working Classification of U.S. Terrestrial Systems. NatureServe, Arlington, Virginia.

Floyd T, Elphick CS, Chisholm G, Mack K, Elston RG, Ammon EM, and Boone JD. 2007. Atlas of the Breeding Birds of Nevada. Reno: University of Nevada Press.

Lawson, A.L., M.L. Morrison and R.D. Slack. 2011. Impacts of Oil and Gas Development on Wintering Grassland Birds at Padre Island National Seashore, Texas. Southeastern Naturalist, Vol. 10, No. 2, pp. 303-320.

McFarland M. L., D. N. Ueckert, F. M. Hons, AND S. Hartmann. 1994. Selective-placement burial of drilling fluids: Effects on soil properties, buffalograss and fourwing saltbush after 4 years. Journal of Range Management 47(6) November 1994 .

USDA – NRCS. 2003. Major Land Resource Area 29, Range Ecological Site Descriptions.

USDA – USFS, USDA – NRCS, USDI – BLM, Univ. of Nevada Cooperative Extension. 2006. Nevada Rangeland Monitoring Handbook (Second Edition).

USGS National Gap Analysis Program. 2004. Provisional Digital Land Cover Map for the Southwestern United States. Version 1.0. RS/GIS Laboratory, College of Natural Resources, Utah State University.

White, C.M., and T.L. Thurow. 1985. Reproduction of ferruginous hawks exposed to controlled disturbance. Condor 87:14-22.

Glossary

Glossary:

A glossary is an alphabetical list of terms in a particular domain of knowledge with the definitions for those terms. Traditionally, a glossary appears at the end of a book and includes terms within that book which are either newly introduced or at least uncommon.

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Acronyms

ACECs:
Areas of Critical Environmental Concern

APD:
Application for Permit to Drill

BLM:
Bureau of Land Management

BMPs:
Best Management Practices

CESA:
Cumulative Effects Study Area

CFR:
Code of Federal Regulations

DR:
Decision Record

EA:
Environmental Assessment

EIS:
Environmental Impact Statement

Ely RMP:
Ely Record of Decision and Approved Resource Management Plan

ES&R:
Emergency Stabilization and Rehabilitation

FLPMA:
Federal Land Policy and Management Act

FONSI:
Finding of No Significant Impact

HA:
Herd Area

IM:
Instructional Memorandum

LCRD:
Lincoln County Road Department

NDOW:
Nevada Department of Wildlife

NEPA:
National Environmental Policy Act

NOS:
Notice of Staking

NRCS:
Natural Resources Conservation Service

RFD:
Reasonably Foreseeable Development scenario

RFFAs:
Reasonably Foreseeable Future Action

RMA:
Road Maintenance Agreement

RMP:
Resource Management Plan

RMP/FEIS:
Ely Proposed Resource Management Plan/Final Environmental Impact Statement

ROW:
Right-of-Way

SHPO:
State Historic Preservation Office

SOPs:
Standard Operating Procedures

SPCC:
Spill Prevention, Control, and Countermeasures

SRP:
Special Recreation Permit

USC:
United States Code

USDA:
United States Department of Agriculture

USFWS:
United States Fish and Wildlife Service

USGS:
United States Geological Survey

VRM:
Visual Resources Management

WSA:
Wilderness Study Area

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Appendix A. The Standard Operating Procedures (SOPs) for Oil and Gas Operations in the Ely District, BLM

Required Notifications:

1. In any emergency situation, after hours authorizations may be obtained from the AO at the CFO.

2. The operator and any of its contractors, subcontractors, or other agents will contact the Authorized Officer (AO) at the Caliente Field Office (CFO) at least 48 hours prior to commencement of access and site construction or reclamation activities.

3. The operator will contact the Petroleum Engineer Technician (PET) at the Nevada State Office at least 24 hours prior to the following operations:

   a. Spudding;

   b. Running and cementing of all casing strings;

   c. BOPE testing; or,

   d. Reclamation of pad.

4. If this well is completed for production, a Notice of First Production via sundry notice (SN) will be submitted to the AO at the CFO no later than the 5th business day after any well begins production on which a royalty is due anywhere on the lease site, when any monies are allocated to the lease site, or such a well resumes production in the case of a well which has been off production for more than 90 days.

General Requirements:

1. The operator is entirely responsible for the actions of its contractors, subcontractors, and other agents. It is the operator's responsibility to ensure that all such parties are fully informed of their responsibilities and the possible consequences of noncompliance.

2. The operator will ensure that activities authorized by this APD comply with other applicable Federal, Tribal, State, and local laws, rules, and regulations.

3. This APD's approval does not warrant or certify that the operator holds legal or equitable title to any right or rights in the subject lease.

   In addition, this APD's approval does not imply that the operator has legal access to the drilling location. When crossing private surface the operator will comply with all 43 CFR 3814 regulations and when crossing public surface off-lease the operator will have an approved right-of-way.

4. This APD is valid for 2 years from its approval date or until lease expiration, whichever occurs first. If activities have not commenced within that time this APD may be returned to the operator without prejudice.

Upon written request and prior to the approved APD's expiration, a one-time extension for up to 2 years may be granted at the AO's sole discretion.

5. Deviation from this approved APD must receive prior approval. If the operator wants to change its operations in any way it must first receive approval from the BLM and, if applicable, from NDOM or any other relevant parties.

6. Failure to comply with this APD's provisions, including but not limited to all applicable regulations, stipulations, and COAs, will be considered a violation possibly subject to any applicable civil and criminal enforcement provisions.

7. A complete copy of the approved APD, including all conditions, stipulations, exhibits, and any subsequently issued written instructions or orders from the AO, SMA, or other relevant parties will be maintained on the well site and be available for reference during all construction, drilling, production, reclamation, and abandonment operations.

8. As well as any site-specific Conditions of Approval (COAs), surface operations will follow the Surface Operating Standards and Guidelines for Oil and Gas Exploration (the Gold Book), and the Resource Program Best Management Practices contained in the Ely District Record of Decision and Approved Resource Management Plan.

9. All survey monuments found within the area of operations will be protected. Survey monuments include, but are not limited to, General Land Office and BLM Cadastral Survey Corners, reference corners, witness points, U. S. Coast and Geodetic benchmarks and triangulation stations, military control monuments, and recognizable civil public and private survey monuments.

   In the event of obliteration or disturbance of any survey monuments, the incident must be immediately reported in writing to the AO.

10. During pad construction, all available topsoil will be salvaged and stockpiled separately from any other material. The topsoil will be seeded immediately with the attached interim seed mix in order to stabilize the stockpiled soil and help prevent the establishment of invasive and non-native weeds. An additional interim seeding may be required.

11. The speed limit on all access roads will be 25 mph or less.

12. Lighting sources will be shielded to lessen visual impacts and decrease the attraction to nocturnal animals.

13. The spud date will be reported orally to the AO and PET 24 HOURS PRIOR TO SPUDDING. This oral notification will be followed by submitting BLM Form 3160-21 stating actual spud date and time to the BLM.

14. A progress report will be filed a minimum of once per week beginning when the well is spud and continuing until well completion. This report may be submitted by mail, fax, or email.

15. The State of Nevada under NAC 522A.215 requires that cutting samples will be collected at a minimum of 30 foot intervals from the surface to the surface casing point, and at 10' intervals from the surface casing shoe to total depth. A minimum of two 15 milliliter sets of cuttings per sampling interval will be cleaned, dried, and placed in 3"x5" sample envelopes, properly identified and sent prepaid to the Nevada Bureau of Mines and Geology (NBMG),

University of Nevada - Reno, Mail Stop 178, Reno, Nevada 89557-0088. You may contact (775) 784-6694 x 133 for more information.

Note: The cuttings are not to be sent to the Nevada State Division of Minerals (NDOM). The cuttings are due within 15 days of well completion. The operator will be responsible for the cost of any further handling of the samples by the NBMG required to meet any standards set forth in this APD.

16. Directional surveys (inclination and azimuth) will be run on the well wherever the inclination exceeds 10 degrees or the projected bottom hole location is within 200 feet of the spacing unit boundary or the lease or unit boundary.

17. Daily drilling and completion progress reports will be submitted to the PE and the CFO on a weekly basis and will include both daily mud reports and directional survey data.

18. Pursuant to 43 CFR 3162.7-1(b) production testing will be permitted only into test tanks. No hydrocarbons will be permitted into the reserve pit except in emergency situations.

19. If hydrogen sulfide (H2S) is encountered, the amounts will be reported to the BLM. A H2S Contingency Plan as outlined in Onshore Order No. 6 will be submitted if required by the AO.

    However, minimum safety precautions must be taken at all times. Personal safety equipment, including a portable H2S detector situated in a position to detect gas from the well and two or more OSHA-approved protective breathing apparatuses must be available on site.

    If the operator's H2S policy exceeds this requirement please supply the CFO with a copy of the relevant policy if it has not already been submitted.

20. Verbal notification may be given by the AO, if given at least 24 hours in advance of formation tests, BOPE tests, running and cementing casing (other than conductor casing), and drilling after lease expiration dates.

21. All BOPE tests of 5,000 psi or greater will be conducted by an independent contractor. Test charts and test results are to be submitted to the BLM PE or PET within 48 hours of BOPE test completion.

22. Two copies of all logs run on the well and one copy of the computed logs in electronic format such as LAS or PDF are to be submitted to the NDOM within 30 days of the logging date.

23. A complete set of daily drilling reports will be submitted upon well completion. These reports will include the spud date, casing information (e.g. size, grade, weight, hole size and setting depth), amount and type of cement used, top of cement, depth of cementing tools, casing test method, intervals tested, perforation information, any acidization or fracturing performed with the results obtained, and the dates on which all work was done.

24. A copy of the well completion report and all test information obtained from this well will be submitted within 30 days after the well completion.

25. No later than the fifth business day after any well begins production on which royalty is due anywhere on a lease site or allocated to a lease site, the operator will notify the BLM by letter or SN of the date on which such production commenced.

The production date is defined as follows: the date on which liquid hydrocarbons are first sold or shipped from a temporary storage facility and for which a run ticket is required to be generated, or the date on which liquid hydrocarbons are first produced into a permanent storage facility, whichever occurs first.

If the operator intends to sell from a test tank, it will be calibrated as specified in Onshore Order Number 4, Part C, and sealed in accordance with Onshore Order Number 3. The operator may initially make any required notifications orally, but it will follow-up with a letter or SN as per 43 CFR 3162.4-1(c). As a minimum, any oral or written notice will provide the following information:

a. Operator's name, address and telephone number;

b. Well name and number;

c. Well location;

d. Date was well placed in a production status;

e. The nature of the well's production (e.g., crude oil, natural gas); and,

f. Any applicable lease communitization or unitization numbers.

26. Upon well completion either for abandonment or production, a SN (BLM Form 3160-4) with details of the well completion procedure will be submitted and approved prior to commencing completion work if the procedures are not included in this APD.

27. If at any time the facilities located on public lands authorized by the lease terms are no longer included in the lease (e.g. due to a unitization agreement change or other lease or unit boundary change) the BLM will process a change in authorization to the appropriate statue. The authorization will be subject to appropriate rental or other financial obligation determined by the AO.

28. Abandonment program approval will be obtained prior to plugging the well. Following an oral approval, a SN titled "Notice of Intent to Abandon" (NOI) will be submitted within five business days. Failure to obtain approval prior to commencement of abandonment operations will result in immediate assessment under 43 CFR 3163.1(b) (3).

    Note: If no logs are run (mud or electric), all open sections of the hole will be filled with cement in a manner which precludes inter-zonal migration of fluids.

Informational Notice:

1. All submitted information not marked “CONFIDENTIAL INFORMATION” will be available for public inspection upon request. If a submittal is to be held confidential, each page will be so marked.

Appendix B. Instruction Memorandum 2013–033: Fluid Minerals Operations — Reducing Preventable Causes of Direct Wildlife Mortality

See attached pdf.

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Appendix C. Instruction Memorandum 2011–010: Cacti and Yucca Salvage Stipulations for External Projects

See attached pdf.

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Appendix D. The Burrowing Owl Protocol at Construction Sites

See attached pdf.

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Appendix E. Weed Risk Assessment

See attached pdf.

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Appendix F. Standard Operating Stipulations for Ely District Mineral Materials Operations

1. Regulations for mineral materials appear in 43 CFR 3600. Information is available on the Ely District BLM web site at: http://www.nv.blm.gov, on the left side select District/Field Office/ Ely, then On Line Services, Regulations, General Mining Law or by calling the Caliente Field Office at (775) 726-8100.

2. The purchaser will possess a copy of the Mineral Material Sales Contract from the BLM and present it for examination upon the verbal request of the authorized officer or any of his agents.

3. Removal of mineral material and associated operations will be restricted to the disturbed area within existing pit boundaries. Any proposed excavations outside existing pit or to enlarge existing pit require prior written authorization with the Caliente Field Office Manager. Permission to open new excavations may or may not be granted at the discretion of the Caliente Field Office, Ely District.

4. All overhanging or vertical banks greater than 3 feet high will be reshaped to a 3:1 ratio before leaving pit area.

5. Removal of mineral material using explosives, front loaders or other heavy equipment requires a written Plan of Operation and written approval.

6. All vegetative clearing will be held to the minimum necessary to accommodate the planned operation. To provide for effective rehabilitation of the disturbed areas, all available growth medium, as practical, will be removed and stockpiled.

7. Spill kits will be available (provided by the proponent) onsite at all times. Spills will be cleaned up immediately and disposed of at an appropriate facility. Reporting of spills to BLM and EPA will follow regulatory standards.

8. All survey monuments, witness corners, and reference monuments must be protected against destruction, obliteration, or damage. Any damaged or obliterated markers must be reestablished in accordance with accepted survey practices at the expense of the permittee.

9. When antiquities or other objects of historical or scientific interest, including historic or prehistoric ruins, vertebrate fossils, or artifacts are discovered, they will be left intact and immediately brought to the attention of the Caliente Field Manager or representative.

10. If human remains are inadvertently discovered during project operations, all operations shall cease and the Caliente Field Manager or their representative will be notified immediately.

11. Operator shall make every effort to prevent, control or suppress any fire in the operating area. Reports of uncontrolled fires will be relayed immediately to the Caliente Field Office at (775) 726-8100 or the Lincoln County Sheriff's office at (775) 962-5151.

12. All Federal, State, and local air quality standards will be adhered to while conduction operations in the pit area. In the case of large operations, operating permits may be required by the State of Nevada. Dust abatement measures may be required for large operations.

13. All trash, garbage, debris and foreign matter must be removed and properly disposed. Site must be maintained and left in a clean and safe condition.

14. Use only existing roads and trails.

I have read and agree to comply with these stipulations as part of the attached contract.

_____ Signature

_____ Date

Appendix G. Proclamation for the Basin and Range National Monument

See attached pdf.